Appendix A
Summary of Public Hearing Comments
(July 2007)

Summary of Public Hearing Comments for Airport Master Plan July 2007

- 29 speakers during public hearing with 3 speaking twice
- 49 written pieces of correspondence, with some overlap with the speakers; 23 pieces of correspondence were identical form letters
- Comments submitted from neighboring municipalities, individuals and organizations including:
    - Village of East Hampton
    - Village of Sagaponack
    - Village of North Haven
    - Village of Sag Harbor
    - Town of Southampton
    - Friends of Long Pond Greenbelt
    - Committee to Stop Airport Expansion
    - East Hampton Business Alliance
    - Citizens for a Quieter Airport
    - East Hampton Aviation Association & Save Our Airport Inc.
    - Airport Noise Abatement Committee

Summary of substantive comments:

1. **Support for Alternative 2 with slight adjustments**- The Town of Southampton and the Villages of North Haven, Sagaponack and Sag Harbor all supported Alternative 2, some also explicitly supported the installation of a Control Tower and an AWOS. Two of the Villages requested the description of alternative 2 (p. V. 234) be modified as follows:
   "Modifies the Airport by optimizing the use of the existing facilities, satisfying safety standards, fulfilling operational demands, and addressing community input of both the Town of East Hampton and Town of Southampton and respective Villages"

2. **Support for Alternative 2 with substantive modifications**- East Hampton Aviation Assoc. & Save Our Airport Inc., East Hampton Business Alliance and various individual speakers supported retaining all three runways keeping Runway 16-34 as a winter runway only in combination with use/rehabilitation and maintenance of Runways 4-22 and 10-28. While use of Runway 16-34 diminishes the capacity of the Terminal Apron for aircraft tiedowns, restricting use of Runway 16-34 to the winter season, when parking demand is greatly reduced may reduce potential conflicts.

3. **Support for Alternative 2 with substantive modifications** - East Hampton Aviation Assoc. & Save Our Airport Inc. recommended obstruction marking

similar to those used at Republic Airport for Runway 10-28 instead of displacement of the threshold in order to save money; and for safety concerns.

Comment: *The obstruction markings used at Republic Airport are for an internal airport roadway and not a public street such as Daniel's Hole Rd. Unlike Daniel's Hole Road, this internal access roadway can be and is closed when the runway is in use. For these and other reasons, the FAA would not allow the Aviation Association recommended type of obstruction markings to be used for runway 10-28. Relocating Daniel's Hole Rd. or a displaced threshold are the only options.*

Estimate costs for the displaced threshold range from $150,000 to $350,000 (based on FAA requirements).

While displacing the threshold of Runway 10-28 will make the East Hampton airport less accommodating for large jets, it will not prohibit them from using the airport safely.

4. **Support for Alternative 2 with clarification**- East Hampton Aviation Assoc. & Save Our Airport Inc. recommended permitting avionics shops in the Industrial Park.

Note: *The Town Attorney clarified, during the public hearing, that the vacant lots within the Industrial Park could be used for all permitted and sp uses which meet the standards in the CI zone including aviation purposes. Corrections to Table 1-3 in the draft Master Plan will be made to reflect that vacant lots in the Industrial Park are not reserved for particular uses.*

5. **Opposition to aspects of Alternative 3 -** One Industrial Park leaseholder and his agent objected to Alternative 3 calling for the demolition of his two buildings (39 and 41 Industrial Park Rd.) which have valid leases with options to purchase property from the Town. He also recommended that the Airport Master Plan address release of Industrial Park lots from the Airport.

Note: *The FAA has not allowed the Town to sell or release any lots until completion of an updated ALP, which the Master Plan will help to create.*

6. **Helicopters** - Twenty speakers at the public hearing and 41 written comments including organizations and municipalities strongly objected to the noise specifically from helicopters. Objections and recommendations regarding helicopters included: helicopters are creating intolerable noise conditions to so many people yet benefit so few people; helicopters and all private aircraft should fly over the properties of people south of the highway since they are the beneficiaries of this luxurious means of travel; correct the 1.3% Master Plan projected growth rate of helicopters to more closely reflect the past

increase in helicopter traffic and their future noise threat; install a control tower to help reduce noise levels; adjust helicopter routes to less populated regions; rotate helicopter routes so as to not burden any one location; prohibit all helicopter use; redirect flight paths to fly over water; ban all helicopters except the quietest (5 bladed main rotors and other new developments in helicopter design); close the airport to all but emergency uses in order to protect the impacts to mating, feeding, and nesting of many species within the rare Long Pond Greenbelt ecosystem, the Greenbelt users in general, and all the residents affected; repeal the restrictions against private helipads to better "spread the misery" among those who use helicopters rather than those who don't; helicopters are not flying at recommended 2000 foot altitudes; increase helicopter routes to 3000 +feet minimum altitude as recommended by helicopter manufacturers; include a guarantee in the Master Plan that future helicopter traffic will not exceed current levels; conduct a Part 161 Noise Study to enable EH to ban helicopters from EH Airport before 2014 if they do not comply with voluntary restraints on altitude, flight paths, hours of operation and total flights; prepare a written plan to reduce total airport noise to levels pre- year 2000; prepare a plan to maximize compliance of all air traffic with local noise ordinances especially between 7 PM and 7 AM; raise user fees to incorporate indirect as well as direct costs including impacts on adjoining home values, groundwater pollution risks; examine options to continue to reject future FAA funding to maximize local control over the airport after the grant assurances expire in 2014; preferred route for helicopters should be continually reviewed and analyzed by the Airport Noise Abatement Committee; impacts from helicopter routes should be borne equally by residents of both EH and Southampton Towns with no one area being impacted more heavily that another.

7. **Airport Noise -** In addition to concerns about noise generated by helicopters using the Airport, additional comments, concerns and recommendations regarding noise included the following: without a comprehensive noise abatement strategy, the Master Plan is fatally flawed; the Plan should establish voluntary black-out for take-offs and landings between 8 PM and 8AM; prepare a plan to maximize compliance of air traffic with local noise ordinances especially between hours of 7 PM and 7AM; prepare a written plan to reduce total airport noise to prevailing levels pre year 2000; jet aircraft over a certain size and/or noise limit should not be permitted at any time; shorten Runway 10-28 or take other actions to reduce the size and frequency of jets using airport; limit hours of operation of jets/ all aircraft; publicize the identity of planes, pilots, individuals and leasing companies of aircraft who defy the voluntary airport noise reducing restrictions; prepare and file a Part 161 Noise Study with the FAA to enable the Town to impose restrictions on aircraft; prohibit touch and goes; establish noise abatement objectives and measurement methodology; obtain qualified legal opinion that determines which noise abatement initiatives can be implemented and under what conditions (i.e., a Part 161 Study, federal legislation, expiration of grant

assurances); prepare and EIS to evaluate all feasible noise abatement options; conduct a financial feasibility study to determine how noise abatement initiatives and safety improvements can be funded without FAA support; request Town of Southampton help pay for control tower and Part 161 Study; implement noise abatement measures by codifying them into the Town Code; by employing an FAA friendly approach even though no FAA money funded the report, the report relied on FAA standards for noise rather than East Hampton established, local standards; report should break down the 30,000 annual operations into type of aircraft, FAA classification, weight, runway length required , noise impact and number of each of these aircraft in order to assess which aircraft produce what noise impact on how many homes so that adverse noise impacts can be assessed; the master plan did not incorporate the consideration of other interested stakeholders; get first-hand understanding of how nearby airports in resort communities (Block Island, Nantucket, MV, Newport etc.) regulate their airports.

8. **Additional comments regarding Alternatives**: The selection of a few arbitrary alternatives stacked the deck and displayed FAA bias; the reduced footprint alternative is presented in an "extreme way" because it shows a radical shortening of the main runway; there are many other alternatives that should be considered between the status quo and shortening the main runway by 40%; report avoids the core question of which aircraft operations should East Hampton seek to accommodate and which aircraft operations should East Hampton seek not to accommodate; alterative analysis was short on facts and long on opinions and prejudices; Alternative Analysis fails to offer preferred helicopter route;

9. **Role statement**- Recommended changes to the role statement include:

"The Town is committed to observing the highest standards of safety, and efficiency and observes all appropriate federal and state standards in terms of layout, operation and maintenance. The facility shall not be allowed to deteriorate, but instead shall be maintained and may be improved in an exemplary manner to best serve light aircraft. (Reason for suggested change: improvements in the past and may in the future attract aircraft we don't want).

"Control of noise and adverse environmental impacts at the airport is consistent with current Town goals for improved quality of life and land and water conservation. These goals recognize that protecting the environment is essential for improving the Town's seasonal and year round economy. These controls are achieved through reasonable, non arbitrary and non discriminatory management practices. These may limit hours of operation, the maximum size or noise footprint of aircraft to be accommodated, regulate excessive peak demand during the summer season and otherwise adjust patterns to minimize community disturbances."

10. **Environmental Management –** By memo dated Oct. 16, 2007 (attached), the Planning Department provided revised and additional language pertaining to the maintenance of the grassland in the environmental management section of the report.

11. **Airport Financing and Control** - One comment supported continued professional and financial support from the FAA; most speakers and letters urged the Town to assert as much local control as possible over the airport, many comments reflected the understanding that maximum local control would only be possible if no more FAA money were accepted. Some comments also reflected an understanding that due to the settlement between the FAA and the Committee to Stop Airport expansion, many grant assurances with the FAA will expire in 2014 and all will expire 2021 provided the Town accepts no more FAA money.

Note: *4/24/07 Draft East Hampton Airport Master Plan report is primarily a physical facilities plan intended to help the Town Board decide the physical layout and composition of the airport appropriate to meet the needs of the community. It has always been intended to couple this document with a financial plan to help the board evaluate funding options for the improvements, maintenance and personnel necessary to meet the highest standards of safety and efficiency for the desired `type of airport'. Proposals from AVZ and SH & E have been submitted to help with the financial plan.*

While it is clear that if the Town accepts FAA funds, FAA grant assurances govern the access at the East Hampton Airport. Additional legal expertise may be required to determine the extent of local control East Hampton will gain if no more FAA funds are accepted.

Appendix B
Sponsor Assurances

ASSURANCES
Airport Sponsors

A. General.

1. These assurances shall be complied with in the performance of grant agreements for airport development, airport planning, and noise compatibility program grants for airport sponsors.

2. These assurances are required to be submitted as part of the project application by sponsors requesting funds under the provisions of Title 49, U.S.C., subtitle VII, as amended. As used herein, the term "public agency sponsor" means a public agency with control of a public-use airport; the term "private sponsor" means a private owner of a public-use airport; and the term "sponsor" includes both public agency sponsors and private sponsors.

3. Upon acceptance of the grant offer by the sponsor, these assurances are incorporated in and become part of the grant agreement.

B. Duration and Applicability.

1. Airport development or Noise Compatibility Program Projects Undertaken by a Public Agency Sponsor. The terms, conditions and assurances of the grant agreement shall remain in full force and effect throughout the useful life of the facilities developed or equipment acquired for an airport development or noise compatibility program project, or throughout the useful life of the project items installed within a facility under a noise compatibility program project, but in any event not to exceed twenty (20) years from the date of acceptance of a grant offer of Federal funds for the project. However, there shall be no limit on the duration of the assurances regarding Exclusive Rights and Airport Revenue so long as the airport is used as an airport. There shall be no limit on the duration of the terms, conditions, and assurances with respect to real property acquired with federal funds. Furthermore, the duration of the Civil Rights assurance shall be specified in the assurances.

2. Airport Development or Noise Compatibility Projects Undertaken by a Private Sponsor. The preceding paragraph 1 also applies to a private sponsor except that the useful life of project items installed within a facility or the useful life of the facilities developed or equipment acquired under an airport development or noise compatibility program project shall be no less than ten (10) years from the date of acceptance of Federal aid for the project.

3. Airport Planning Undertaken by a Sponsor. Unless otherwise specified in the grant agreement, only Assurances 1, 2, 3, 5, 6, 13, 18, 30, 32, 33, and 34 in section C apply to planning projects. The terms, conditions, and assurances of the grant agreement shall remain in full force and effect during the life of the project.

C. Sponsor Certification. The sponsor hereby assures and certifies, with respect to this grant that:

1. General Federal Requirements. It will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance and use of Federal funds for this project including but not limited to the following:

Federal Legislation

a. Title 49, U.S.C., subtitle VII, as amended.
b. Davis-Bacon Act - 40 U.S.C. 276(a), et seq.[1]
c. Federal Fair Labor Standards Act - 29 U.S.C. 201, et seq.
d. Hatch Act - 5 U.S.C. 1501, et seq.[2]

e. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 Title 42 U.S.C. 4601, et seq.[1] [2]
f. National Historic Preservation Act of 1966 - Section 106 - 16 U.S.C. 470(f).[1]
g. Archeological and Historic Preservation Act of 1974 - 16 U.S.C. 469 through 469c.[1]
h. Native Americans Grave Repatriation Act - 25 U.S.C. Section 3001, et seq.
i. Clean Air Act, P.L. 90-148, as amended.
j. Coastal Zone Management Act, P.L. 93-205, as amended.
k. Flood Disaster Protection Act of 1973 - Section 102(a) - 42 U.S.C. 4012a.[1]
l. Title 49 ,U.S.C., Section 303, (formerly known as Section 4(f))
m. Rehabilitation Act of 1973 - 29 U.S.C. 794.
n. Civil Rights Act of 1964 - Title VI - 42 U.S.C. 2000d through d-4.
o. Age Discrimination Act of 1975 - 42 U.S.C. 6101, et seq.
p. American Indian Religious Freedom Act, P.L. 95-341, as amended.
q Architectural Barriers Act of 1968 -42 U.S.C. 4151, et seq.[1]
r. Power plant and Industrial Fuel Use Act of 1978 - Section 403- 2 U.S.C. 8373.[1]
s. Contract Work Hours and Safety Standards Act - 40 U.S.C. 327, et seq.[1]
t. Copeland Anti kickback Act - 18 U.S.C. 874.[1]
u. National Environmental Policy Act of 1969 - 42 U.S.C. 4321, et seq.[1]
v. Wild and Scenic Rivers Act, P.L. 90-542, as amended.
w. Single Audit Act of 1984 - 31 U.S.C. 7501, et seq.[2]
x. Drug-Free Workplace Act of 1988 - 41 U.S.C. 702 through 706.

Executive Orders

Executive Order 11246 - Equal Employment Opportunity[1]
Executive Order 11990 - Protection of Wetlands
Executive Order 11988 – Flood Plain Management
Executive Order 12372 - Intergovernmental Review of Federal Programs.
Executive Order 12699 - Seismic Safety of Federal and Federally Assisted New Building Construction[1]
Executive Order 12898 - Environmental Justice

Federal Regulations

a. 14 CFR Part 13 - Investigative and Enforcement Procedures.
b. 14 CFR Part 16 - Rules of Practice For Federally Assisted Airport Enforcement Proceedings.
c. 14 CFR Part 150 - Airport noise compatibility planning.
d. 29 CFR Part 1 - Procedures for predetermination of wage rates.[1]
e. 29 CFR Part 3 - Contractors and subcontractors on public building or public work financed in whole or part by loans or grants from the United States.[1]
f. 29 CFR Part 5 - Labor standards provisions applicable to contracts covering federally financed and assisted construction (also labor standards provisions applicable to non-construction contracts subject to the Contract Work Hours and Safety Standards Act).[1]
g. 41 CFR Part 60 - Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor (Federal and federally assisted contracting requirements).[1]

h. 49 CFR Part 18 - Uniform administrative requirements for grants and cooperative agreements to state and local governments.[3]
i. 49 CFR Part 20 - New restrictions on lobbying.
j. 49 CFR Part 21 - Nondiscrimination in federally-assisted programs of the Department of Transportation - effectuation of Title VI of the Civil Rights Act of 1964.
k. 49 CFR Part 23 - Participation by Disadvantage Business Enterprise in Airport Concessions.
l. 49 CFR Part 24 - Uniform relocation assistance and real property acquisition for Federal and federally assisted programs.[1] [2]
m. 49 CFR Part 26 – Participation By Disadvantaged Business Enterprises in Department of Transportation Programs.
n. 49 CFR Part 27 - Nondiscrimination on the basis of handicap in programs and activities receiving or benefiting from Federal financial assistance.[1]
o. 49 CFR Part 29 – Government wide debarment and suspension (non-procurement) and government wide requirements for drug-free workplace (grants).
p. 49 CFR Part 30 - Denial of public works contracts to suppliers of goods and services of countries that deny procurement market access to U.S. contractors.
q. 49 CFR Part 41 - Seismic safety of Federal and federally assisted or regulated new building construction.[1]

Office of Management and Budget Circulars

a. A-87 - Cost Principles Applicable to Grants and Contracts with State and Local Governments.
b A-133 - Audits of States, Local Governments, and Non-Profit Organizations

[1] These laws do not apply to airport planning sponsors.
[2] These laws do not apply to private sponsors.
[3] 49 CFR Part 18 and OMB Circular A-87 contain requirements for State and Local Governments receiving Federal assistance. Any requirement levied upon State and Local Governments by this regulation and circular shall also be applicable to private sponsors receiving Federal assistance under Title 49, United States Code.

Specific assurances required to be included in grant agreements by any of the above laws, regulations or circulars are incorporated by reference in the grant agreement.

2. Responsibility and Authority of the Sponsor.

a. **Public Agency Sponsor:** It has legal authority to apply for the grant, and to finance and carry out the proposed project; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.

b. **Private Sponsor:** It has legal authority to apply for the grant and to finance and carry out the proposed project and comply with all terms, conditions, and assurances of this grant agreement. It shall designate an official representative and shall in writing direct and authorize that person

to file this application, including all understandings and assurances contained therein; to act in connection with this application; and to provide such additional information as may be required.

3. Sponsor Fund Availability. It has sufficient funds available for that portion of the project costs which are not to be paid by the United States. It has sufficient funds available to assure operation and maintenance of items funded under the grant agreement which it will own or control.

4. Good Title.

a. It, a public agency or the Federal government, holds good title, satisfactory to the Secretary, to the landing area of the airport or site thereof, or will give assurance satisfactory to the Secretary that good title will be acquired.

b. For noise compatibility program projects to be carried out on the property of the sponsor, it holds good title satisfactory to the Secretary to that portion of the property upon which Federal funds will be expended or will give assurance to the Secretary that good title will be obtained.

5. Preserving Rights and Powers.

a. It will not take or permit any action which would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in the grant agreement without the written approval of the Secretary, and will act promptly to acquire, extinguish or modify any outstanding rights or claims of right of others which would interfere with such performance by the sponsor. This shall be done in a manner acceptable to the Secretary.

b. It will not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the property shown on Exhibit A to this application or, for a noise compatibility program project, that portion of the property upon which Federal funds have been expended, for the duration of the terms, conditions, and assurances in the grant agreement without approval by the Secretary. If the transferee is found by the Secretary to be eligible under Title 49, United States Code, to assume the obligations of the grant agreement and to have the power, authority, and financial resources to carry out all such obligations, the sponsor shall insert in the contract or document transferring or disposing of the sponsor's interest, and make binding upon the transferee all of the terms, conditions, and assurances contained in this grant agreement.

c. For all noise compatibility program projects which are to be carried out by another unit of local government or are on property owned by a unit of local government other than the sponsor, it will enter into an agreement with that government. Except as otherwise specified by the Secretary, that agreement shall obligate that government to the same terms, conditions, and assurances that would be applicable to it if it applied directly to the FAA for a grant to undertake the noise compatibility program project. That agreement and changes thereto must be satisfactory to the Secretary. It will take steps to enforce this agreement against the local government if there is substantial non-compliance with the terms of the agreement.

d. For noise compatibility program projects to be carried out on privately owned property, it will enter into an agreement with the owner of that

property which includes provisions specified by the Secretary. It will take steps to enforce this agreement against the property owner whenever there is substantial non-compliance with the terms of the agreement.

e. If the sponsor is a private sponsor, it will take steps satisfactory to the Secretary to ensure that the airport will continue to function as a public-use airport in accordance with these assurances for the duration of these assurances.

f. If an arrangement is made for management and operation of the airport by any agency or person other than the sponsor or an employee of the sponsor, the sponsor will reserve sufficient rights and authority to insure that the airport will be operated and maintained in accordance Title 49, United States Code, the regulations and the terms, conditions and assurances in the grant agreement and shall insure that such arrangement also requires compliance therewith.

6. **Consistency with Local Plans.** The project is reasonably consistent with plans (existing at the time of submission of this application) of public agencies that are authorized by the State in which the project is located to plan for the development of the area surrounding the airport.

7. **Consideration of Local Interest.** It has given fair consideration to the interest of communities in or near where the project may be located.

8. **Consultation with Users.** In making a decision to undertake any airport development project under Title 49, United States Code, it has undertaken reasonable consultations with affected parties using the airport at which project is proposed.

9. **Public Hearings.** In projects involving the location of an airport, an airport runway, or a major runway extension, it has afforded the opportunity for public hearings for the purpose of considering the economic, social, and environmental effects of the airport or runway location and its consistency with goals and objectives of such planning as has been carried out by the community and it shall, when requested by the Secretary, submit a copy of the transcript of such hearings to the Secretary. Further, for such projects, it has on its management board either voting representation from the communities where the project is located or has advised the communities that they have the right to petition the Secretary concerning a proposed project.

10. **Air and Water Quality Standards.** In projects involving airport location, a major runway extension, or runway location it will provide for the Governor of the state in which the project is located to certify in writing to the Secretary that the project will be located, designed, constructed, and operated so as to comply with applicable air and water quality standards. In any case where such standards have not been approved and where applicable air and water quality standards have been promulgated by the Administrator of the Environmental Protection Agency, certification shall be obtained from such Administrator. Notice of certification or refusal to certify shall be provided within sixty days after the project application has been received by the Secretary.

11. **Pavement Preventive Maintenance**. With respect to a project approved after January 1, 1995, for the replacement or reconstruction of pavement at the airport, it assures or certifies that it has implemented an effective airport pavement maintenance-management program and it assures that it will use such program for the useful life of any pavement constructed, reconstructed or repaired with Federal financial assistance at the airport. It will provide such

reports on pavement condition and pavement management programs as the Secretary determines may be useful.

12. Terminal Development Prerequisites. For projects which include terminal development at a public use airport, as defined in Title 49, it has, on the date of submittal of the project grant application, all the safety equipment required for certification of such airport under section 44706 of Title 49, United States Code, and all the security equipment required by rule or regulation, and has provided for access to the passenger enplaning and deplaning area of such airport to passengers enplaning and deplaning from aircraft other than air carrier aircraft.

13. Accounting System, Audit, and Record Keeping Requirements.

a. It shall keep all project accounts and records which fully disclose the amount and disposition by the recipient of the proceeds of the grant, the total cost of the project in connection with which the grant is given or used, and the amount or nature of that portion of the cost of the project supplied by other sources, and such other financial records pertinent to the project. The accounts and records shall be kept in accordance with an accounting system that will facilitate an effective audit in accordance with the Single Audit Act of 1984.

b. It shall make available to the Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, for the purpose of audit and examination, any books, documents, papers, and records of the recipient that are pertinent to the grant. The Secretary may require that an appropriate audit be conducted by a recipient. In any case in which an independent audit is made of the accounts of a sponsor relating to the disposition of the proceeds of a grant or relating to the project in connection with which the grant was given or used, it shall file a certified copy of such audit with the Comptroller General of the United States not later than six (6) months following the close of the fiscal year for which the audit was made.

14. Minimum Wage Rates. It shall include, in all contracts in excess of $2,000 for work on any projects funded under the grant agreement which involve labor, provisions establishing minimum rates of wages, to be predetermined by the Secretary of Labor, in accordance with the Davis-Bacon Act, as amended (40 U.S.C. 276a-276a-5), which contractors shall pay to skilled and unskilled labor, and such minimum rates shall be stated in the invitation for bids and shall be included in proposals or bids for the work.

15. Veteran's Preference. It shall include in all contracts for work on any project funded under the grant agreement which involve labor, such provisions as are necessary to insure that, in the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to Veterans of the Vietnam era and disabled veterans as defined in Section 47112 of Title 49, United States Code. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

16. Conformity to Plans and Specifications. It will execute the project subject to plans, specifications, and schedules approved by the Secretary. Such plans, specifications, and schedules shall be submitted to the Secretary prior to commencement of site preparation, construction, or other performance under this grant agreement, and, upon approval of the Secretary, shall be incorporated into this grant agreement. Any modification to the approved

plans, specifications, and schedules shall also be subject to approval of the Secretary, and incorporated into the grant agreement.

17. Construction Inspection and Approval. It will provide and maintain competent technical supervision at the construction site throughout the project to assure that the work conforms to the plans, specifications, and schedules approved by the Secretary for the project. It shall subject the construction work on any project contained in an approved project application to inspection and approval by the Secretary and such work shall be in accordance with regulations and procedures prescribed by the Secretary. Such regulations and procedures shall require such cost and progress reporting by the sponsor or sponsors of such project as the Secretary shall deem necessary.

18. Planning Projects. In carrying out planning projects:

a. It will execute the project in accordance with the approved program narrative contained in the project application or with the modifications similarly approved.

b. It will furnish the Secretary with such periodic reports as required pertaining to the planning project and planning work activities.

c. It will include in all published material prepared in connection with the planning project a notice that the material was prepared under a grant provided by the United States.

d. It will make such material available for examination by the public, and agrees that no material prepared with funds under this project shall be subject to copyright in the United States or any other country.

e. It will give the Secretary unrestricted authority to publish, disclose, distribute, and otherwise use any of the material prepared in connection with this grant.

f. It will grant the Secretary the right to disapprove the sponsor's employment of specific consultants and their subcontractors to do all or any part of this project as well as the right to disapprove the proposed scope and cost of professional services.

g. It will grant the Secretary the right to disapprove the use of the sponsor's employees to do all or any part of the project.

h. It understands and agrees that the Secretary's approval of this project grant or the Secretary's approval of any planning material developed as part of this grant does not constitute or imply any assurance or commitment on the part of the Secretary to approve any pending or future application for a Federal airport grant.

19. Operation and Maintenance.

a. The airport and all facilities which are necessary to serve the aeronautical users of the airport, other than facilities owned or controlled by the United States, shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable Federal, state and local agencies for maintenance and operation. It will not cause or permit any activity or action thereon which would interfere with its use for airport purposes. It will suitably

operate and maintain the airport and all facilities thereon or connected therewith, with due regard to climatic and flood conditions. Any proposal to temporarily close the airport for non-aeronautical purposes must first be approved by the Secretary.
In furtherance of this assurance, the sponsor will have in effect arrangements for-

(1) Operating the airport's aeronautical facilities whenever required;

(2) Promptly marking and lighting hazards resulting from airport conditions, including temporary conditions; and

(3) Promptly notifying airmen of any condition affecting aeronautical use of the airport.

Nothing contained herein shall be construed to require that the airport be operated for aeronautical use during temporary periods when snow, flood or other climatic conditions interfere with such operation and maintenance. Further, nothing herein shall be construed as requiring the maintenance, repair, restoration, or replacement of any structure or facility which is substantially damaged or destroyed due to an act of God or other condition or circumstance beyond the control of the sponsor.

b. It will suitably operate and maintain noise compatibility program items that it owns or controls upon which Federal funds have been expended.

20. Hazard Removal and Mitigation. It will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.

21. Compatible Land Use. It will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. In addition, if the project is for noise compatibility program implementation, it will not cause or permit any change in land use, within its jurisdiction, that will reduce its compatibility, with respect to the airport, of the noise compatibility program measures upon which Federal funds have been expended.

22. Economic Nondiscrimination.

a. It will make the airport available as an airport for public use on reasonable terms and without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.

b. In any agreement, contract, lease, or other arrangement under which a right or privilege at the airport is granted to any person, firm, or corporation to conduct or to engage in any aeronautical activity for furnishing services to the public at the airport, the sponsor will insert and enforce provisions requiring the contractor to-

(1) furnish said services on a reasonable, and not unjustly discriminatory, basis to all users thereof, and

(2) charge reasonable, and not unjustly discriminatory, prices for each unit or service, provided that the contractor may be allowed to make reasonable and nondiscriminatory discounts, rebates, or other similar types of price reductions to volume purchasers.

c. Each fixed-based operator at the airport shall be subject to the same rates, fees, rentals, and other charges as are uniformly applicable to all other fixed-based operators making the same or similar uses of such airport and utilizing the same or similar facilities.

d. Each air carrier using such airport shall have the right to service itself or to use any fixed-based operator that is authorized or permitted by the airport to serve any air carrier at such airport.

e. Each air carrier using such airport (whether as a tenant, non tenant, or subtenant of another air carrier tenant) shall be subject to such nondiscriminatory and substantially comparable rules, regulations, conditions, rates, fees, rentals, and other charges with respect to facilities directly and substantially related to providing air transportation as are applicable to all such air carriers which make similar use of such airport and utilize similar facilities, subject to reasonable classifications such as tenants or non tenants and signatory carriers and non signatory carriers. Classification or status as tenant or signatory shall not be unreasonably withheld by any airport provided an air carrier assumes obligations substantially similar to those already imposed on air carriers in such classification or status.

f. It will not exercise or grant any right or privilege which operates to prevent any person, firm, or corporation operating aircraft on the airport from performing any services on its own aircraft with its own employees [including, but not limited to maintenance, repair, and fueling] that it may choose to perform.

g. In the event the sponsor itself exercises any of the rights and privileges referred to in this assurance, the services involved will be provided on the same conditions as would apply to the furnishing of such services by commercial aeronautical service providers authorized by the sponsor under these provisions.

h. The sponsor may establish such reasonable, and not unjustly discriminatory, conditions to be met by all users of the airport as may be necessary for the safe and efficient operation of the airport.

i. The sponsor may prohibit or limit any given type, kind or class of aeronautical use of the airport if such action is necessary for the safe operation of the airport or necessary to serve the civil aviation needs of the public.

23. Exclusive Rights. It will permit no exclusive right for the use of the airport by any person providing, or intending to provide, aeronautical services to the public. For purposes of this paragraph, the providing of the services at an airport by a single fixed-based operator shall not be construed as an exclusive right if both of the following apply:

a. It would be unreasonably costly, burdensome, or impractical for more than one fixed-based operator to provide such services, and
b. If allowing more than one fixed-based operator to provide such services would require the reduction of space leased pursuant to an existing agreement between such single fixed-based operator and such airport.

It further agrees that it will not, either directly or indirectly, grant or permit any person, firm, or corporation, the exclusive right at the airport to conduct any aeronautical activities, including, but not limited to charter flights, pilot training, aircraft rental and sightseeing, aerial photography, crop dusting, aerial advertising and surveying, air carrier operations,

aircraft sales and services, sale of aviation petroleum products whether or not conducted in conjunction with other aeronautical activity, repair and maintenance of aircraft, sale of aircraft parts, and any other activities which because of their direct relationship to the operation of aircraft can be regarded as an aeronautical activity, and that it will terminate any exclusive right to conduct an aeronautical activity now existing at such an airport before the grant of any assistance under Title 49, United States Code.

24. Fee and Rental Structure. It will maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, taking into account such factors as the volume of traffic and economy of collection. No part of the Federal share of an airport development, airport planning or noise compatibility project for which a grant is made under Title 49, United States Code, the Airport and Airway Improvement Act of 1982, the Federal Airport Act or the Airport and Airway Development Act of 1970 shall be included in the rate basis in establishing fees, rates, and charges for users of that airport.

25. Airport Revenues.

a. All revenues generated by the airport and any local taxes on aviation fuel established after December 30, 1987, will be expended by it for the capital or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport. Provided, however, that if covenants or assurances in debt obligations issued before September 3, 1982, by the owner or operator of the airport, or provisions enacted before September 3, 1982, in governing statutes controlling the owner or operator's financing, provide for the use of the revenues from any of the airport owner or operator's facilities, including the airport, to support not only the airport but also the airport owner or operator's general debt obligations or other facilities, then this limitation on the use of all revenues generated by the airport (and, in the case of a public airport, local taxes on aviation fuel) shall not apply.

b. As part of the annual audit required under the Single Audit Act of 1984, the sponsor will direct that the audit will review, and the resulting audit report will provide an opinion concerning, the use of airport revenue and taxes in paragraph (a), and indicating whether funds paid or transferred to the owner or operator are paid or transferred in a manner consistent with Title 49, United States Code and any other applicable provision of law, including any regulation promulgated by the Secretary or Administrator.

c. Any civil penalties or other sanctions will be imposed for violation of this assurance in accordance with the provisions of Section 47107 of Title 49, United States Code.

26. Reports and Inspections. It will:

a. submit to the Secretary such annual or special financial and operations reports as the Secretary may reasonably request and make such reports available to the public; make available to the public at reasonable times and places a report of the airport budget in a format prescribed by the Secretary;

b. for airport development projects, make the airport and all airport records and documents affecting the airport, including deeds, leases, operation and use

agreements, regulations and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request;

c. for noise compatibility program projects, make records and documents relating to the project and continued compliance with the terms, conditions, and assurances of the grant agreement including deeds, leases, agreements, regulations, and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request; and

d. in a format and time prescribed by the Secretary, provide to the Secretary and make available to the public following each of its fiscal years, an annual report listing in detail:
   (i) all amounts paid by the airport to any other unit of government and the purposes for which each such payment was made; and
   (ii) all services and property provided by the airport to other units of government and the amount of compensation received for provision of each such service and property.

27. Use by Government Aircraft. It will make available all of the facilities of the airport developed with Federal financial assistance and all those usable for landing and takeoff of aircraft to the United States for use by Government aircraft in common with other aircraft at all times without charge, except, if the use by Government aircraft is substantial, charge may be made for a reasonable share, proportional to such use, for the cost of operating and maintaining the facilities used. Unless otherwise determined by the Secretary, or otherwise agreed to by the sponsor and the using agency, substantial use of an airport by Government aircraft will be considered to exist when operations of such aircraft are in excess of those which, in the opinion of the Secretary, would unduly interfere with use of the landing areas by other authorized aircraft, or during any calendar month that-

a. Five (5) or more Government aircraft are regularly based at the airport or on land adjacent thereto; or

b. The total number of movements (counting each landing as a movement) of Government aircraft is 300 or more, or the gross accumulative weight of Government aircraft using the airport (the total movement of Government aircraft multiplied by gross weights of such aircraft) is in excess of five million pounds.

28. Land for Federal Facilities. It will furnish without cost to the Federal Government for use in connection with any air traffic control or air navigation activities, or weather-reporting and communication activities related to air traffic control, any areas of land or water, or estate therein, or rights in buildings of the sponsor as the Secretary considers necessary or desirable for construction, operation, and maintenance at Federal expense of space or facilities for such purposes. Such areas or any portion thereof will be made available as provided herein within four months after receipt of a written request from the Secretary.

29. Airport Layout Plan.

a. It will keep up to date at all times an airport layout plan of the airport showing (1) boundaries of the airport and all proposed additions thereto, together with the boundaries of all offsite areas owned or controlled by the sponsor for airport purposes and proposed additions thereto; (2) the location and nature of all existing and proposed airport facilities and structures (such as runways, taxiways, aprons, terminal buildings, hangars and roads), including all proposed extensions and reductions of existing airport facilities; and (3) the location of all existing and proposed nonaviation areas and of all existing improvements thereon. Such airport layout plans and each amendment, revision, or modification thereof, shall

be subject to the approval of the Secretary which approval shall be evidenced by the signature of a duly authorized representative of the Secretary on the face of the airport layout plan. The sponsor will not make or permit any changes or alterations in the airport or any of its facilities which are not in conformity with the airport layout plan as approved by the Secretary and which might, in the opinion of the Secretary, adversely affect the safety, utility or efficiency of the airport.

b. If a change or alteration in the airport or the facilities is made which the Secretary determines adversely affects the safety, utility, or efficiency of any federally owned, leased, or funded property on or off the airport and which is not in conformity with the airport layout plan as approved by the Secretary, the owner or operator will, if requested, by the Secretary (1) eliminate such adverse effect in a manner approved by the Secretary; or (2) bear all costs of relocating such property (or replacement thereof) to a site acceptable to the Secretary and all costs of restoring such property (or replacement thereof) to the level of safety, utility, efficiency, and cost of operation existing before the unapproved change in the airport or its facilities.

30. Civil Rights. It will comply with such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from funds received from this grant. This assurance obligates the sponsor for the period during which Federal financial assistance is extended to the program, except where Federal financial assistance is to provide, or is in the form of personal property or real property or interest therein or structures or improvements thereon in which case the assurance obligates the sponsor or any transferee for the longer of the following periods: (a) the period during which the property is used for a purpose for which Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits, or (b) the period during which the sponsor retains ownership or possession of the property.

31. Disposal of Land.

a. For land purchased under a grant for airport noise compatibility purposes, it will dispose of the land, when the land is no longer needed for such purposes, at fair market value, at the earliest practicable time. That portion of the proceeds of such disposition which is proportionate to the United States' share of acquisition of such land will, at the discretion of the Secretary, (1) be paid to the Secretary for deposit in the Trust Fund, or (2) be reinvested in an approved noise compatibility project as prescribed by the Secretary, including the purchase of nonresidential buildings or property in the vicinity of residential buildings or property previously purchased by the airport as part of a noise compatibility program.

b. For land purchased under a grant for airport development purposes (other than noise compatibility), it will, when the land is no longer needed for airport purposes, dispose of such land at fair market value or make available to the Secretary an amount equal to the United States' proportionate share of the fair market value of the land. That portion of the proceeds of such disposition which is proportionate to the United States' share of the cost of acquisition of such land will, (1) upon application to the Secretary, be reinvested in another eligible airport improvement project or projects approved by the Secretary at that airport or within the national airport system, or (2) be paid to the Secretary for deposit in the Trust Fund if no eligible project exists.

c. Land shall be considered to be needed for airport purposes under this assurance if (1) it may be needed for aeronautical purposes (including runway protection zones) or serve as noise buffer land, and (2) the revenue from interim uses of such land contributes to the financial self-sufficiency of the airport. Further, land purchased with a grant received by an airport operator or owner before December 31, 1987, will be considered to be needed for airport purposes if the Secretary or Federal agency making such grant before December 31, 1987, was notified by the operator or owner of the uses of such land, did not object to such use, and the land continues to be used for that purpose, such use having commenced no later than December 15, 1989.

d. Disposition of such land under (a) (b) or (c) will be subject to the retention or reservation of any interest or right therein necessary to ensure that such land will only be used for purposes which are compatible with noise levels associated with operation of the airport.

32. Engineering and Design Services. It will award each contract, or sub-contract for program management, construction management, planning studies, feasibility studies, architectural services, preliminary engineering, design, engineering, surveying, mapping or related services with respect to the project in the same manner as a contract for architectural and engineering services is negotiated under Title IX of the Federal Property and Administrative Services Act of 1949 or an equivalent qualifications-based requirement **prescribed** for or by the sponsor of the airport.

33. Foreign Market Restrictions. It will not allow funds provided under this grant to be used to fund any project which uses any product or service of a foreign country during the period in which such foreign country is listed by the United States Trade Representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction.

34. Policies, Standards, and Specifications. It will carry out the project in accordance with policies, standards, and specifications approved by the Secretary including but not limited to the advisory circulars listed in the Current FAA Advisory Circulars for AIP projects, dated _____ and included in this grant, and in accordance with applicable state policies, standards, and specifications approved by the Secretary.

35. Relocation and Real Property Acquisition. (1) It will be guided in acquiring real property, to the greatest extent practicable under State law, by the land acquisition policies in Subpart B of 49 CFR Part 24 and will pay or reimburse property owners for necessary expenses as specified in Subpart B. (2) It will provide a relocation assistance program offering the services described in Subpart C and fair and reasonable relocation payments and assistance to displaced persons as required in Subpart D and E of 49 CFR Part 24. (3) It will make available within a reasonable period of time prior to displacement, comparable replacement dwellings to displaced persons in accordance with Subpart E of 49 CFR Part 24.

36. Access By Intercity Buses. The airport owner or operator will permit, to the maximum extent practicable, intercity buses or other modes of transportation to have access to the airport, however, it has no obligation to fund special facilities for intercity buses or for other modes of transportation.

37. Disadvantaged Business Enterprises. The recipient shall not discriminate on the basis of race, color, national origin or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of 49 CFR Part 26. The Recipient shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure

non discrimination in the award and administration of DOT-assisted contracts. The recipient's DBE program, as required by 49 CFR Part 26, and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the recipient of its failure to carry out its approved program, the Department may impose sanctions as provided for under Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801).

38. Hangar Construction. If the airport owner or operator and a person who owns an aircraft agree that a hangar is to be constructed at the airport for the aircraft at the aircraft owner's expense, the airport owner or operator will grant to the aircraft owner for the hangar a long term lease that is subject to such terms and conditions on the hangar as the airport owner or operator may impose.

39. Competitive Access.

a. If the airport owner or operator of a medium or large hub airport (as defined in section 47102 of title 49, U.S.C.) has been unable to accommodate one or more requests by an air carrier for access to gates or other facilities at that airport in order to allow the air carrier to provide service to the airport or to expand service at the airport, the airport owner or operator shall transmit a report to the Secretary that-

1. Describes the requests;
2. Provides an explanation as to why the requests could not be accommodated; and
3. Provides a time frame within which, if any, the airport will be able to accommodate the requests.

b. Such report shall be due on either February 1 or August 1 of each year if the airport has been unable to accommodate the request(s) in the six month period prior to the applicable due date

Appendix C
Understanding Aircraft Sound and Its Measurement

UNDERSTANDING AIRCRAFT SOUND AND ITS MEASUREMENT

Noise, unwanted sound, differs from virtually all other forms of environmental pollution. It is unwanted energy, not unwanted substance. It is invisible, ceases in the absence of the source, and leaves no lasting traces, except for annoyance on the part of the listener. Understanding the basic characteristics of noise is the beginning of objective consideration of the impact of aircraft noise in areas around airports. A glossary of selected aircraft acoustic terms is attached. Key terms are shown in bold. The most important concepts are discussed below.

An Introduction to the Physics of Sound and Its Measurement - Sound is created by changing pressure in a medium, usually air. It is a series of small changes or vibrations in air at characteristic frequencies. These differing frequencies are sensed as differences in **pitch**. Sound is also characterized by **power level**. This refers to the strength of the noise measured at its source. **Intensity** or **pressure level** refers to power spread over a given surface area. It is **sound pressure level** which is directly measured by a **sound level meter**.

Measurement and perception of sound is also affected by the duration of the sound level above the background or **ambient noise level**. Perceptions of sound are also influenced by its quality, or degree of order. This is the difference between music and noise, harmony and disharmony. Many differing systems of noise measurement have been developed over the years to better account for human annoyance and perceptions. There have been continuing requests to develop new metrics for certain specific situations such as the affects of noise on animals. A final important realization in understanding human reaction to noise is that certain sounds are inherently annoying regardless of intensity; finger nails on the blackboard are the most obvious example, but other high pitched whines are also disproportionately annoying.

Of greatest interest in assessing the noise of aircraft events is the **pressure level**. This property of sound is measured in **decibels (dB)**. This is the **logarithmic** equivalent of the ratio of the pressure level of a sound to a refer-

ence pressure set approximately at the threshold of normal hearing sensitivity. Logarithmic equivalents are used because the range of pressures sensed by the human ear is very wide, on the order of one to ten billon on a linear scale. The resulting measurements in decibels equate a 10 dB increase with an order of magnitude (10 fold) increase in sound pressure level. The human ear, by contrast, senses the same ten (10) decibel increase as a doubling of the noise level. This aspect of sound is described as **loudness**. See Figures 1 and 2 which described the full range of audible sounds.

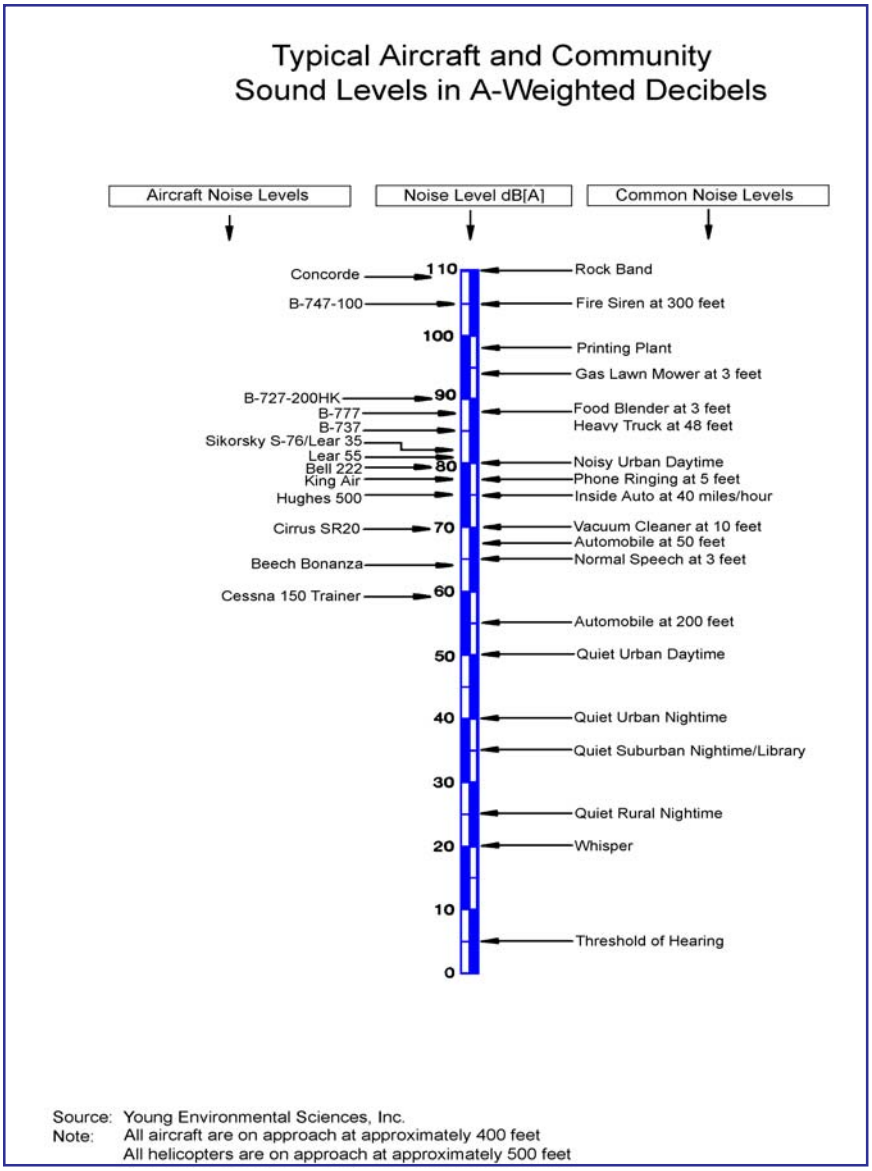


Figure 1 - Typical Aircraft and Community Sounds Compared

There are other differences between the responses of human hearing and a straightforward measurement of sound pressure level. The most important involves the differing sensitivity of the ear to various frequency levels in the audible spectrum. The most common weighting system is called "**A weighting.**" By using an electronic network, the lower sensitivity of the ear to sounds in the lower and higher pitch ranges is duplicated. See Figure 3. This measure is common to almost all environmental

COMPARISON OF SOUND LEVEL (dBA) WITH RELATIVE SOUND ENERGY (LOG SCALE)

Sound	Sound Level dB(A)	Relative Loudness (Approximate)	Relative Sound Energy
Jet Plane, 100 feet	130	128	10,000,000
Rock Music with Amplifier	120	64	1,000,000
Thunder, Danger of Permanent Hearing Loss	110	32	100,000
Boiler Shop, Power Mower	100	16	10,000
Orchestral Crescendo at 25 feet, Noisy Kitchen	90	8	1,000
Busy Street	80	4	100
Interior of Department Store	70	2	10
Ordinary Conversation, 3 feet away	60	1	1
Quiet Automobile at Low Speed	50	1/2	.1
Quiet Country Residence-Day, Whipser	40	1/4	.01
Quiet C ountry Residence-Night	30	1/8	.001
Unoccupied Broadcast Studio	20	1/16	.0001
Rustle of Leaves	10	1/32	.00001
Threshold of Hearing	0	1/64	.000001

* U.S. Department of Housing and Urban Development Circular 1390.2

Figure 2 - Comparison of Sound Level with Relative Sound Energy and Loudness.

noise measurements. It is fundamentally different, however, than the **Perceived Noise Decibel (PNdB)** and **Effective Perceived Noise Decibel (EPNdB)** which the FAA has used in measuring aircraft sound levels during certification. Note that in all these cases, an instantaneous sound level is being measured.

Accounting for Noise Exposure Over Time - The effects of noise are of greatest concern when they recur regularly or persist for long periods. The key concept is the **dose response** relationship. The greatest concern in noise exposure is the prevention of hearing loss. Generally, hearing damage is proportional to the total exposure level, intensity plus duration. Therefore, the technique normally employed is to sum the total energy (**energy summation**) and present the measurement in terms of a long term average. What lies behind this is the concept of **energy equivalency**, i.e., the assumption that all sound regardless of how it occurs is essentially the same. While this is realistic if the key index is

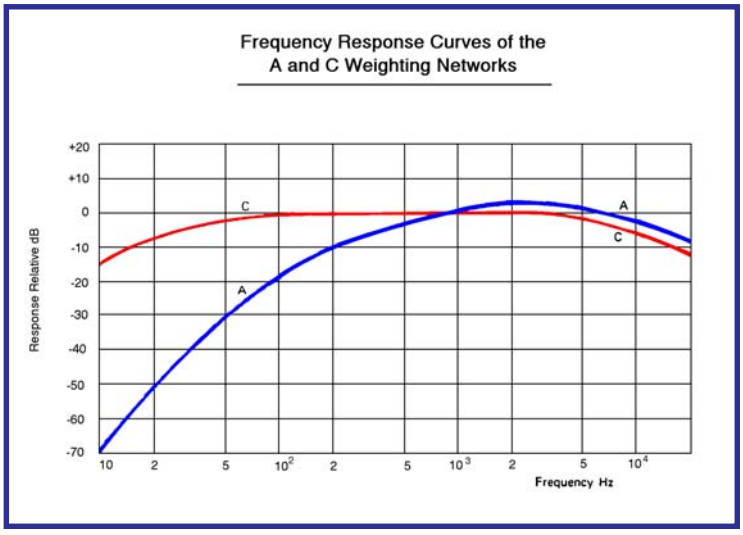


Figure 3 - Frequency Response in A and C Weighting

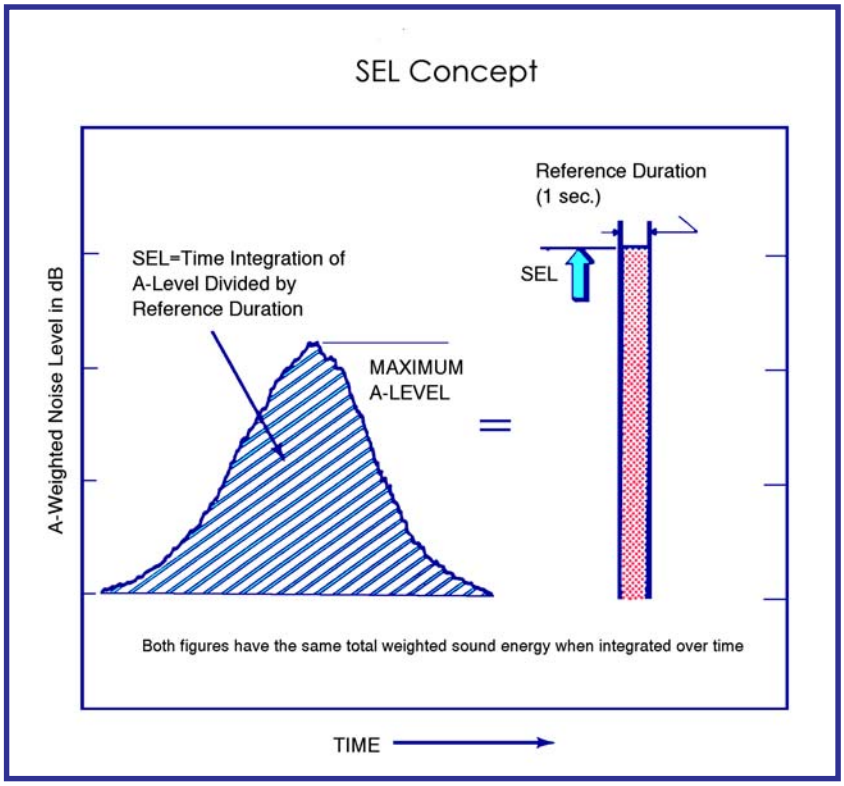


Figure 4 - SEL Concept

long term damage to the ear, human annoyance may or may not be proportional to the energy sum.

Aircraft noise can be intense, but is usually brief. Rarely is there sufficient long term exposure in off airport areas to produce the primary health concern. However, considerable annoyance can be created by brief loud noises from aircraft, particularly at night. Moreover, cumulative aircraft noise exposure around airports varies significantly over the course of time because of differences in traffic, runway use, weather conditions and pilot technique. For these reasons a cumulative noise measurement statistic is used to describe long term aircraft noise impact. In this case, the federally mandated noise measurement system is the **Day Night Average Sound Level (Ldn, L_{dn}, LDN or DNL)**. This system is basically a straightforward long term average with a 10 dB penalty attached to any sounds occurring between 10:00 PM and 7:00 AM. The normal time period for an Ldn statistic is 24 hours. Usually, this is based on a statistically representative day which reflects the annual average conditions. Long term averages such as for a month or a quarter are produced by averaging daily values. Normally, because of variations in daily usage of an airport, a monthly, seasonal or annual equivalent Ldn measurement may be used. This can be based on long term measurements or produced reasonably accurately through the use of a computer model, most commonly the FAA's Integrated Noise Model.

The Ldn measure is produced by averaging a series of differing noise events.

Each noise event is described mathematically by the creation of an equivalent value which is "**time integrated**" into a single numerical value with a standard reference duration of one second. The total noise occurring during a long event is condensed into a single value known as the **Single Event Noise Exposure Level (SENEL)** or **Sound Exposure Level (SEL)**. This eases the process of adding together noise events and dividing the level by the number of seconds during the elapsed time period to produce the long term average.

Aircraft Classification - Jet powered aircraft have historically been the noisiest component of the aircraft fleet. In the last 10 to 15 years, jet aircraft as a group have become significantly quieter per pound of weight lifted. This is largely due to the beneficial effects of improving jet engine technology, specifically the **high bypass ratio turbofan engine.** The bypass ratio refers to the proportion of air which is accelerated by the front fan of the engine, but not mixed with fuel and ignited. The air which bypasses the combustion section of the engine forms a boundary layer between the hot engine exhaust and cooler slower moving air around the aircraft reducing the shear forces which produce the characteristic rumble in jet exhaust. It substantially reduces noise emissions and improves operating economies.

The FAA has differing classifications for jet aircraft based on their propulsion technology and relative noise emissions. High bypass ratio engined aircraft are generally all classed as **Stage 3** or **Stage 4** under current FAA source noise control regulations. Older lower bypass ratio engine powered aircraft are classed as **Stage 2**. All Stage 2 airliners have been grounded or converted to Stage 3 as of the end of the Year 2000. Some Stage 2 business jet aircraft are still in use. The earliest jet aircraft, those powered by pure turbojet engines, are classed as **Stage 1** and virtually all of these aircraft were grounded or converted to Stage 2 by the end of 1985.

The FAA classification scheme, codified in **Federal Aviation Regulations Part 36**, is based on allowable maximum noise levels versus total aircraft takeoff weight. Noise emission levels for aircraft under 75,000 pounds, however, are uniform. Thus, care must be taken in interpreting the classification of aircraft. Large Stage 3 aircraft may actually be noisier than small Stage 2

aircraft.

Distinguishing between differing business jet aircraft noise levels based on airborne visual observation is inherently difficult. This is especially difficult when the aircraft is viewed from below and there are no other objects in the field of view for comparison. Most business jet types have similar airframe layouts (planforms) despite the fact that they vary substantially in size and gross weight. Noise levels themselves often cannot be reliably used to distinguish between Stage 2 and Stage 3 types. Even in the case of relatively noisy Stage 2 aircraft, noise emissions are also greatly effected by pilot technique, i.e., minimizing thrust levels immediately after takeoff. Further, on approach, source noise emission levels are similar regardless of stage class.

Helicopter Noise – Helicopters differ significantly from fixed wing aircraft in terms of noise emissions. Helicopters may be piston powered or turbine powered. Piston powered helicopters are typically small and light and therefore unobtrusive. They are most commonly used for training, observation, personal transportation, and agricultural purposes. Most helicopters that are used in urban transport are larger, turbine powered and usually professionally flown. All turbine powered helicopters are classed as Stage 2 under FAA criteria.

Helicopter noise emissions have several distinguishing characteristics. Noise emissions are not uniform in all directions due to the changing angle of the rotating blades advancing versus retreating. The sound is pulsating with each pulse corresponding to the passage of a rotor blade in its circular path. These variations are averaged out in the measurement process. Unlike fixed wing aircraft, helicopters have greater emissions on landing than on takeoff and the highest noise emissions occur during cruise mode. Helicopters can also be responsible for a phenomenon called blade slap that occurs when an advancing blade overtakes the turbulent wake of a preceding blade. Helicopters, as is the case with all transportation noise sources, emit significant low frequency noise and vibrations which are more felt than heard.

These characteristics may create the impression that helicopters are relatively noisy whereas they compare favorably to fixed wing aircraft in service. Because they approach and depart at much steeper angles than fixed wing aircraft, noise impacts around heliports cover a very limited area. They also offer considerable flexibility in placement of flight tracks easing the matter of avoiding noise sensitive areas.

Airport Noise Compatibility - One of the advantages of the **Day Night Average Sound Level** system is the fact that it is associated with an accepted schedule of land use compatibility guidelines which are based on public health, safety, and welfare criteria. These determinations were originally developed through surveys of residents around airports. While there are weaknesses in the foundation of these determinations and the guidelines themselves are insufficiently protective for certain sensitive land uses, these land use guidelines themselves have proven durable. Now in their fourth decade, and codified in federal law under **Federal Aviation Regulations Part 150**, these guidelines are likely to soldier on, essentially unchanged, for at least the next several years.

Briefly summarized, cumulative aircraft noise levels below **Ldn 65** are considered to be compatible with all land uses. Residential uses become technically incompatible when Ldn 65 is exceeded unless the homes are fitted with acoustical insulation. Commercial land uses become incompatible above the **Ldn 70** and industrial uses incompatible above **Ldn 75**. However, substantial annoyance, as evidenced by noise complaints, can and does occur in areas below Ldn 65. This is because certain types of events can be disproportionately annoying, because differing individuals have differing thresholds of sensitivity, because differing ambient noise levels may mask certain events in some areas and because differing activities, such as sleep, may have extremely low tolerance thresholds. Additionally, in the metropolitan New York area, aircraft noise impacts from several differing airports may affect the same geographical areas.

Noise Mitigation - There are only three ways to reduce instantaneous noise impact. First is the reduction of source noise levels, i.e., fly quiet modern aircraft or employ noise abatement techniques in thrust management. Sec-

ond, increase the distance between the source and the receiver. Relocation of flight tracks, and preferential runway use are used to accomplish this. Third, protect the receiver. Noise barriers and acoustical noise insulation installed in homes are the principle means to accomplish this.

Current Noise Regulations - In October of 1990, the Congress passed the Airport Noise and Capacity Act of 1990 which became codified in Federal Aviation Regulation Part 161. In this legislation, airlines were required to largely phase out all Stage 2 aircraft by the Year 2000. In establishing this requirement, airports and local governments were strongly discouraged from promulgating restrictions more severe than those imposed by the Federal government.

Simple Mathematical Rules in Environmental Acoustics

1. The human ear perceives a 10 decibel increase in noise level as a doubling of loudness.

2. A 10 decibel increase in sound level means the source must emit 10 times as much energy at the same distance or the source must move 3 times closer to the receiver.

3. Doubling the source noise level, i.e. , 2 sources at the same level, causes a 3 dB increase in the sound level.

4. Doubling the source to receiver distance decreases the sound level by 6 dB.

5. The human ear has difficulty in distinguishing differences in noise levels of less than 3 dB.

6. Within the Ldn system, a 1.5 dB change is considered significant in residential areas exposed to Ldn 65 or above; within Ldn 60, a change of 3 dB is considered significant.

GLOSSARY OF SELECTED TERMS IN AIRCRAFT AND ENVIRONMENTAL ACOUSTICS

Ambient Noise: The totality of noise in a given place and time - usually a composite of sounds from varying sources at varying distances. Also referred to as Residual Noise.

A Weighted Sound Level (dBA): A number in decibels, which is read from a sound-level meter, when the meter is switched to its weighting scale labeled "A." The number approximately measures the relative noisiness or annoyance level of many common sounds. The human ear is less efficient at low and high sound frequencies than at medium or speech-range frequencies. In order to obtain a single number for the level of a noise containing a wide range , in a manner which represents the ear's response, it is necessary to reduce or weight the effects of the low and high frequencies with respect to the medium frequencies. The resultant sound level is said to be A-weighted.

Background Noise: (1) The total noise in a situation or system except for the sound that is desired or needed. (In a living room the desired sound might be speech from the television set, while background noise might emanate from an air conditioner, street traffic, and so on). (2) In acoustical measurement, the electrical noise in the measuring system.

Community Noise Equivalent Level (CNEL): A scale which takes account of all the A-weighted sound received at a point, from all noise events causing noise levels above some prescribed value. Weighting factors are included which place greater importance upon noise events occurring during the evening hours (7:00 pm to 10 am) and even greater importance upon noise events at night (10:00 pm to 7:00 am).

Composite Noise Rating (CNR): A scale which takes account of the totality of all aircraft operations at an airport in quantifying the total aircraft noise environment. It was the earliest method for evaluating compatible land use around airports. Basically, to calculate a CNR value one begins with a measure of the maximum noise magnitude from each aircraft flyby and adds weighting factors which sum the cumulative effect of all flights. The scale used to describe individual noise events is perceived noise level (in PNdB), the term accounting for number of flights is $10 \log_{10} N$ (where N is the number of flight operations), and each night operation counts as much as 20 daytime operations. Very approximately, the noise exposure level at a point expressed in the CNR scale will be numerically 35-37 dB higher than if expressed in the CNEL scale.

Day/Night Average Sound Level (LDN): A statistical descriptor of the sound over a 24-hour period taking account of the fact that sounds are more annoying at night than during the day. Calculated by determining the equivalent sound level over a 24-hour period after adding 10 dB(A) to the sound levels occurring in the period 10 pm to 7 am.

Day/Night Average Sound Level-Community (LDNC): The LDN levels for all

noise sources in the community other than those identified by the noise monitoring system as aircraft events.

Day/Night Average Sound Level-Aircraft (LDNA): The LDN levels for aircraft noise events.

Day/Night Average Sound Level-Total (LDNT): The summation of community and aircraft LDN Levels.

Decibels (dB): One tenth of a Bel. Sound pressure is measured in decibels. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Decibels are not linear units, but representative points on a sharply rising (expotential) curve. Thus, 100 decibels represent 10 billion times as much acoustic energy as one decibel.

Doppler Effect: A change in the frequency with which sound or other waves from a given source reach an observer. The frequency decreases with the speed at which source and observer move away from each other, and increases with the speed at which they move toward each other. Thus, the pitch of a sound is apparently raised or lowered as the source and observer move toward or away from each other.

Dose-Response: The phenomenon of relating a dose of sound exposure to a correlated response of physiological hearing damage. The theory says that at specified lower threshold small doses of sound will produce no physiological damage.

Duration (DUR): The change in sound pressure level can be charted as a hill-shaped curve that clearly illustrates the duration of sound. Often, when examining airport noise, we are concerned with durations defined as the amount of time the sound pressure level remains within the 10dB of the maximum sound pressure level during the flyby.

Effective Perceived Noise Level (EPNL): A physical measure designed to estimate the effective "noisiness" of a single noise event, usually an aircraft fly-over; it is derived from instantaneous Perceived Noise Level (PNL) values by applying corrections for pure tones and for the duration of the noise.

Equivalent Sound Level (Leq): The level of a constant sound having the same sound energy as an actual time-varying sound over a given period. An energy-averaged sound level, usually but not always of the A-weighted energy.

Equivalent Sound Level-Community (LEQC): The equivalent level of all noise sources in the community other than those identified by the noise monitoring system as aircraft events.

Equivalent Sound Level-Aircraft (LEQA): The equivalent level of all aircraft noise events.

Equivalent Sound Level-Total (LEQT): The total equivalent level resulting from the combination of community noise levels.

Footprint: The shape and size of the geographical pattern of noise impact an aircraft makes upon the areas near an airport while landing or taking off.

Frequency: The number of oscillations per second (a) of a sine-wave of sound,

and (b) of a vibrating solid object; now expressed in hertz (abbreviations H_z), formerly in cycles per second (abbreviation cps).

Hearing Disability: An inability, due to hearing impairment, to remain employed at full wages.

Hearing Handicap: The disadvantage imposed by a hearing impairment sufficient to affect one's efficiency in the situation of everyday living.

Hearing Impairment: A deviation of change for the worse in either hearing structure or function, usually outside of the normal range; see hearing loss.

Hearing Loss: At a specified frequency, and an amount, in decibels, by which a person's hearing is worse than some selected norm. The norm may be the threshold established at some earlier period for him or the average threshold for population, or the threshold selected by a standards body for audiometric measurements.

L_{10} Level: The sound level exceeded ten percent of the time. It corresponds to peaks of noise in the time history of environmental noise in a particular setting.

L_{50} Level: The sound level exceeded 50 percent of the time, corresponding to the average level of noise in a particular setting over time.

L_{90} Level: The sound level exceeded 90 percent of the time, corresponding to the residual or ambient noise level.

Level: The value of a quantity in decibels. The level of an acoustical quantity (sound pressure or sound power) in decibels is ten times the logarithm (base ten) of the ratio of the quantity to a reference quantity of the same physical kind.

Loudness or Intensity: A characteristic of an auditory sensation, which may be scaled in increments representing degrees of loudness. Loudness also is a function of the amplitude of the sound wave, but also depends upon the frequency, waveform, and the area of the sound generator.

Noise Exposure Forecast (NEF): A scale (analogous to CNEL and CNR) which has been used by the federal government in land use planning guides applied in connection with airports. In the NEF scale, the basic measure of magnitude for individual noise events is the effective perceived noise level (EPNL), in units of EPNdB. This magnitude measure includes the effect of duration per event. The terms accounting for number of flights and for weighting by time period are the same as in the CNR scale. Very approximately, the noise exposure level at a point expressed in the NEF scale will be numerically about 33 dB lower than if expressed in the CNEL scale.

Octave band: All of the components, in a sound spectrum, the frequencies of which are between two sine-wave components separated by an octave.

Octave-Band Sound Pressure Level: The integrated sound pressure level of only those sine-wave components in a specified octave band, for a noise or sound having a wide spectrum.

Oscillation: The variation with time, alternately increasing and decreasing, (a)

of some feature of an audible sound, such as the sound pressure, or (b) of some feature of a vibrating solid objects, such as the displacement of its surface.

Peak Sound Pressure: The maximum instantaneous sound pressure (a) for a transient or impulsive sound of short duration, or (b) in a specified time interval for a sound of long duration.

Perceived Noise Level (PNL): A quantity in decibels that provides a subjective assessment of the perceived "noisiness" of aircraft noise. The units of Perceived Noise Level are Perceived Noise Decibels, PNdB.

Period: How long it takes for a periodic wave form (such as a sine wave) to repeat itself.

Pitch: The sensation of sound from a tone which is dependent on the number of vibrations per second of the sound source, e.g., vocal cords, musical instruments, etc. The higher the frequency of vibration the higher the pitch. Sound produced by a source having a specific number of vibrations per second is used as a standard for tuning musical instruments.

Plane Wave: A wave in which the wave fronts are parallel and perpendicular to the direction in which it is traveling.

Presbycusis: The decline in hearing acuity that normally occurs as a person grows older.

Pure Tone: A sound wave whose wave form is that of a sine-wave.

Quality or Timbre: A characteristic of sound that depends chiefly on the waveforms and intensity of the sound waves. This characteristic distinguishes harsh sounds from harmonic or musical tones.

Retrofit: The retroactive modification of an existing building or machine. In current usage, the most common application of the word "retrofit" is to the modification of existing jet aircraft engines for noise abatement purposes.

Reverberation: The persistence of sound in an enclosed space as a result of multiple reflections, after the sound source has stopped.

Single Event Noise Exposure Level (SENEL): Measure of sound used principally in California, which integrates the maximum sound level of an event with the duration that the event exceeds a predetermined dB(A) threshold level. The SENEL represents all the acoustical energy of a noise event.

Sound Exposure: The cumulative acoustic stimulation at the ear of a person or persons over a period of time. Also known as noise dose when the exposure of one individual is described.

Sound Exposure Level (SEL): A scale used to describe the energy content of flyover noise. The total energy content is measured and then nomalized to a one second time period.

Sound Level Meter: An instrument, comprising a microphone, an amplifier, an output meter, and frequency-weighting networks, used for the measurement of noise and sound level in specified ways.

Sound/Noise Level: The weighted sound pressure level obtained by use of a

sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

Sound Power Level: The level of sound power, averaged over a period of time, the reference being 10^{12} watts.

Sound Pressure Level: (1) the minute fluctuations in atmospheric pressure which accompany the passage of a sound wave. The pressure fluctuations on the typanic membrane are transmitted to the inner ear and give rise to the sensation of audible sound. Human ears are sensitive to a wide range of sound pressures. The loudest sounds that humans hear without pain have about one million times more energy than the quietest sounds we hear. Also, our ears are not equally sensitive to all sound pressures - it takes more energy to produce a noticeable change in a loud sound than it does to produce a noticeable change in a quiet sound. (2) For a steady sound, the value of the sound pressure averaged over a period of time. (3) Sound pressure is usually measured (a) in dynes per square centimeter (dyn/cm^2), or (b) in $N/m^2 = 10$ dyn/cm $=10^5$ times the atmospheric pressure.

Speech Interference Level (SIL): A calculated quantity providing a guide to the interfering effect of a noise on reception of speech communication. The speech-interference level is the arithmetic average of the octave-band sound-pressure levels of the interfering noise in the most important part of the speech frequency range. The levels in the three octave-frequency bands centered at 500, 1000, and 2000 H_z are commonly averaged to determine the speech-interference level. Numerically, the magnitudes of aircraft sounds in the Speech-Interference Level scale are approximately 18 to 22 dB less than the same sounds in the Perceived Noise Level scale in PNdB, depending on the spectrum of the sound.

Temporary Threshold Shift (TTS): A temporary impairment of hearing ability as indicated by an increase in the threshold of audibility. Sufficient exposures to noise of sufficient intensity will lead to a permanent threshold shift (PTS) which constitutes hearing loss. Also Hearing Loss, Threshold Shift, Threshold of Audibility.

Threshold Shift: An increase in hearing threshold level that results from exposure to noise.

One Third-Octave Band: A frequency band whose cutoff frequencies have a ratio of $2^{1/3}$, which is approximately 1.26. The cut-off frequencies of 891 H_z and 1123 H_z define a third-octave band in common use.

Transient Sounds: Sounds whose average properties do not remain constant in time. Examples are an aircraft flyover, a passing truck, a sonic boom.

Appendix D
Helicopter Operating Instructions and Routes

Town of East Hampton Airport
200 Daniel's Hole Road
Wainscott, NY 11975
631.537.1130

April, 2009

To: Eastern Region Helicopter Council
679 B Rose Hollow Drive
Yardley, PA 19067

Subject: Helicopter Operating Instructions

Noise Abatement

The following Noise Abatement Routes are strongly recommended for helicopter operations at KHTO. The attached map shows the Arrival Routes in RED and the Departure Routes in GREEN.

ARRIVALS

Arrivals from the west proceed to PECONIC (N41.01.10.0 W072.22.28.8). Proceed over water to FERRY (N41.02.45.7 W072.18.19.5) and then to NORTHWEST CREEK (N41.00.55.0 W072.15.25.0). Cross FERRY at or above 2500ft. AGL. Descend after FERRY to cross NORTHWEST CREEK at or above 2000 ft. AGL.

Arrivals from the Southwest fly along the south shore to GEORGICA (N40.55.46.1 W072.13.25.5) at or above 2000 feet AGL. Proceed over Georgica Pond to the airport above the traffic pattern, descending north of the airport for landing. HTO fixed wing traffic pattern attitudes are 1000 ft. AGL for light single and twin aircraft, and 1500 ft. AGL for Jets.

DEPARTURES

Gain as much altitude as possible within the airport boundary. Depart westbound over the power lines to LONG POND (N40.58.14.6 W072.17.54.7). Continue to base of JESSUP'S NECK (N40.59.44.6 W072.22.09.2), climbing to above 2500 feet AGL as soon as possible. Departures north and east bound, proceed to NORTHWEST CREEK. Depart South by climbing above the traffic pattern north of the airport and then proceed over Georgica Pond to the south shore.

PLEASE NOTE:

- Pathways depicted on the map are for illustration only and may not conform precisely to coordinates.

- Please call or come in to the Airport Office if you have any questions or suggestions for improving these procedures.

Ramp Operations

All arrivals and departures to HTO should be to and from active runways or parallel taxiways so as not to interfere with fixed wing traffic. Approaches and departures to and from the **Terminal Ramp** area are **prohibited.**

No part of a helicopter, **including rotor tips**, is to come closer than **100 feet** to the Terminal building. Parking spot 1 in front of the Terminal Building is reserved for fixed wing aircraft only.

Boarding and deplaning a helicopter with the rotors turning is considered unsafe and should be avoided. Use of a rotor brake, if installed is encouraged.

Operating rotors for an extended period of time on the ramp is discouraged. **More than five (5) minutes is considered excessive.** Your cooperation with this limit is for noise and environmental considerations. Passengers who demand rotors turning when they arrive should be informed of this limit. If it is necessary to operate engines and/or rotors for extended periods of time, please move to one of the transient helicopter pads or as far from the Terminal Building as possible.

Other Considerations

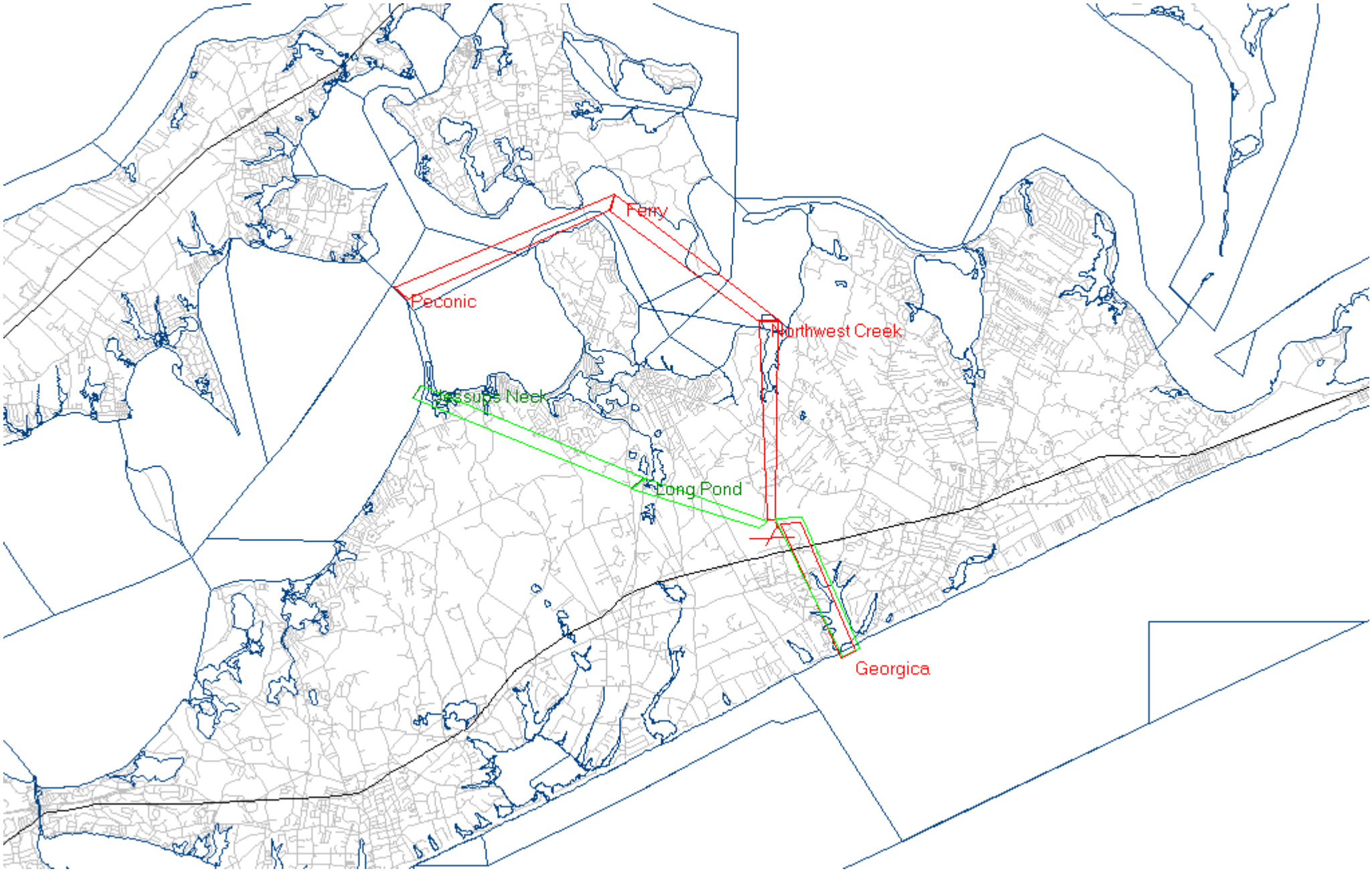
Helicopter operations are the most serious environmental challenges we have at HTO. Anything you can do to mitigate the environmental impact of your operations will be greatly appreciated by this office and the surrounding communities.

Noise complaints increase dramatically during periods of inclement weather because of aircraft flying below a broken or overcast layer. While such operations are strongly discouraged (and may violate FAR 91.13), adherence to suggested routes is even more important.

The area surrounding HTO has substantial air traffic during the summer months some of which may have neither a radio nor transponder. Adherence to the suggested routes reduces the potential for conflicts but does not eliminate it. Frequent announcements of position, altitude and intended route are strongly encouraged. See and avoid is paramount, all available aircraft lights should be illuminated day or night. Coordination with or monitoring of New York approach frequency is recommended to help avoid IFR traffic that may otherwise appear suddenly from IMC conditions. Operators are reminded that merely because an operation may be legal does not necessarily make it safe.

Sincerely,

James L. Brundige
Airport Manager


Ferry
Peconic
Northwest Creek
Hessups Neck
Long Pond
Georgica

Appendix E
Comparison of Single Event Noise Contours for Helicopters at 1,000 Ft.

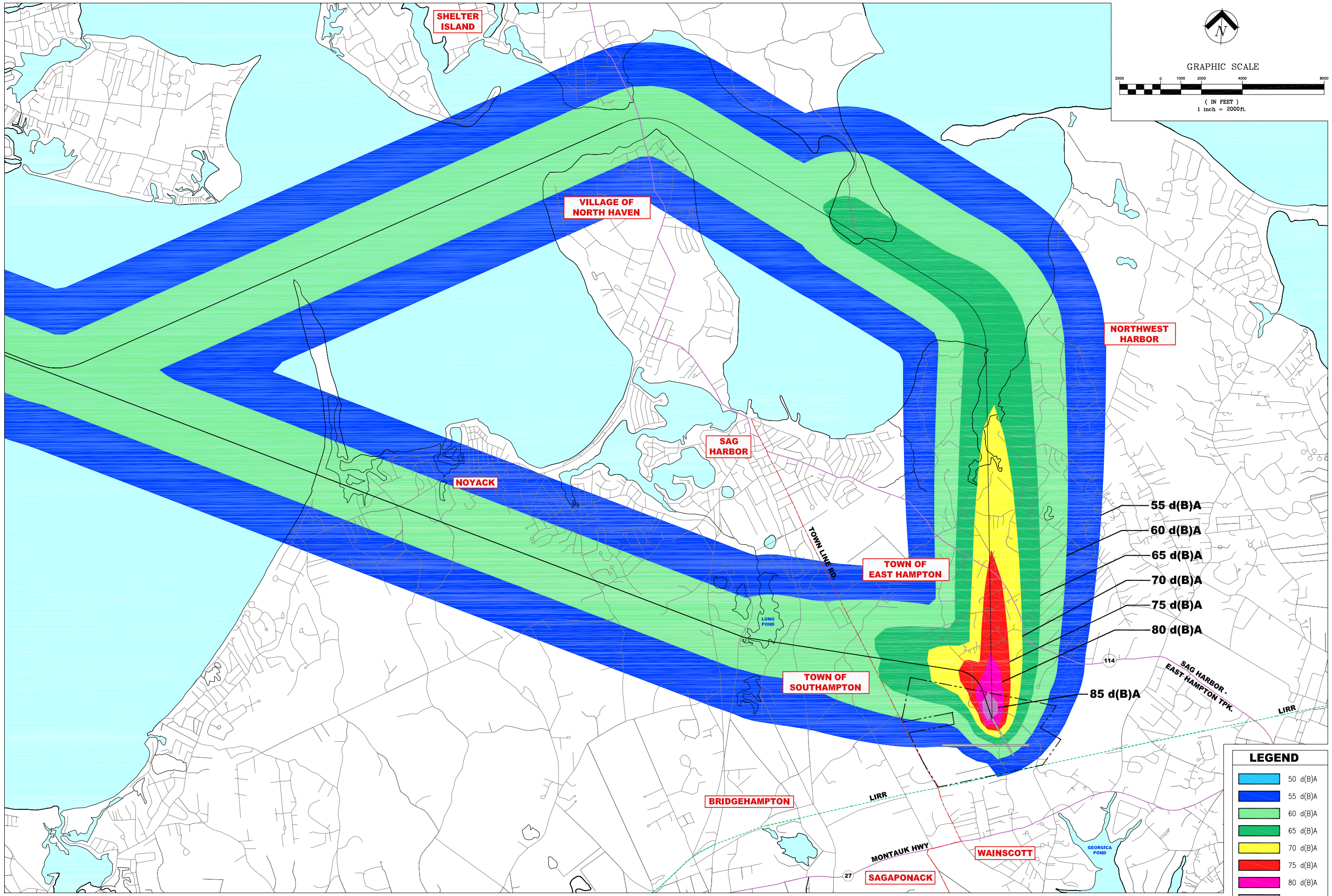


FIGURE 1 - HELICOPTER SA355 AT 1,000 FT. SINGLE EVENT

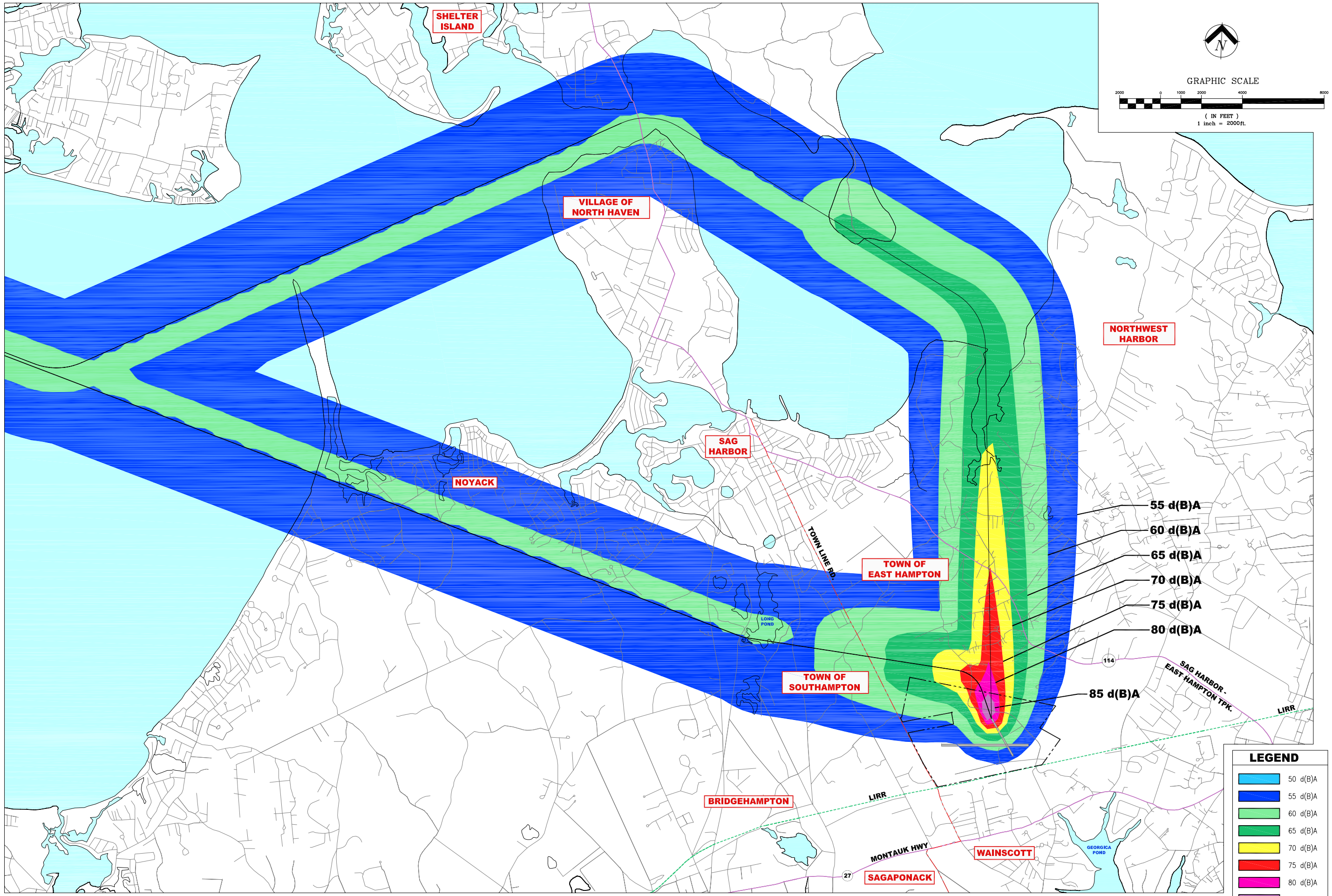


FIGURE 2 - HELICOPTER SA350D AT 1,000 FT. SINGLE EVENT

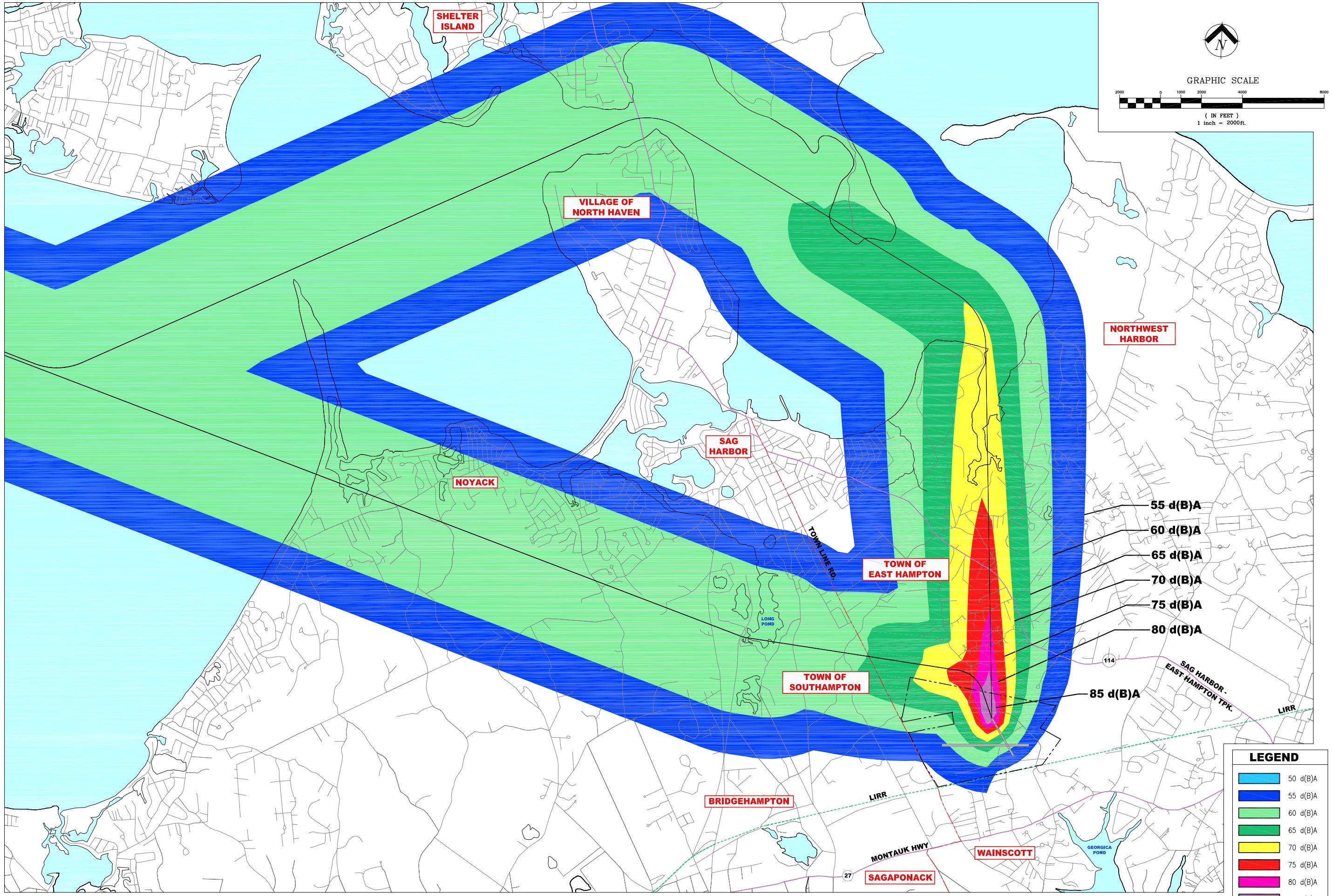


FIGURE 3 - HELICOPTER S76 AT 1,000 FT. SINGLE EVENT

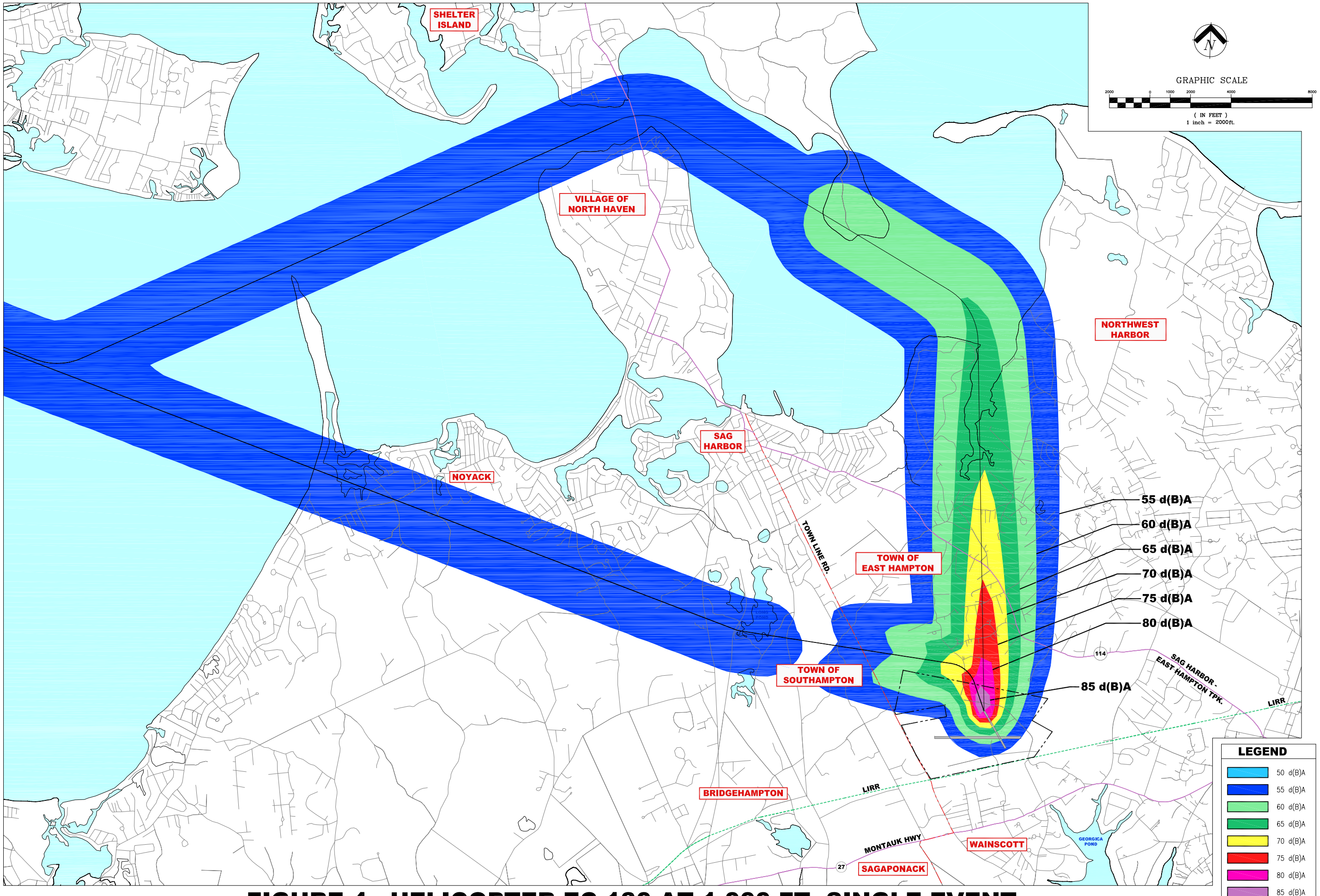


FIGURE 4 - HELICOPTER EC 130 AT 1,000 FT. SINGLE EVENT

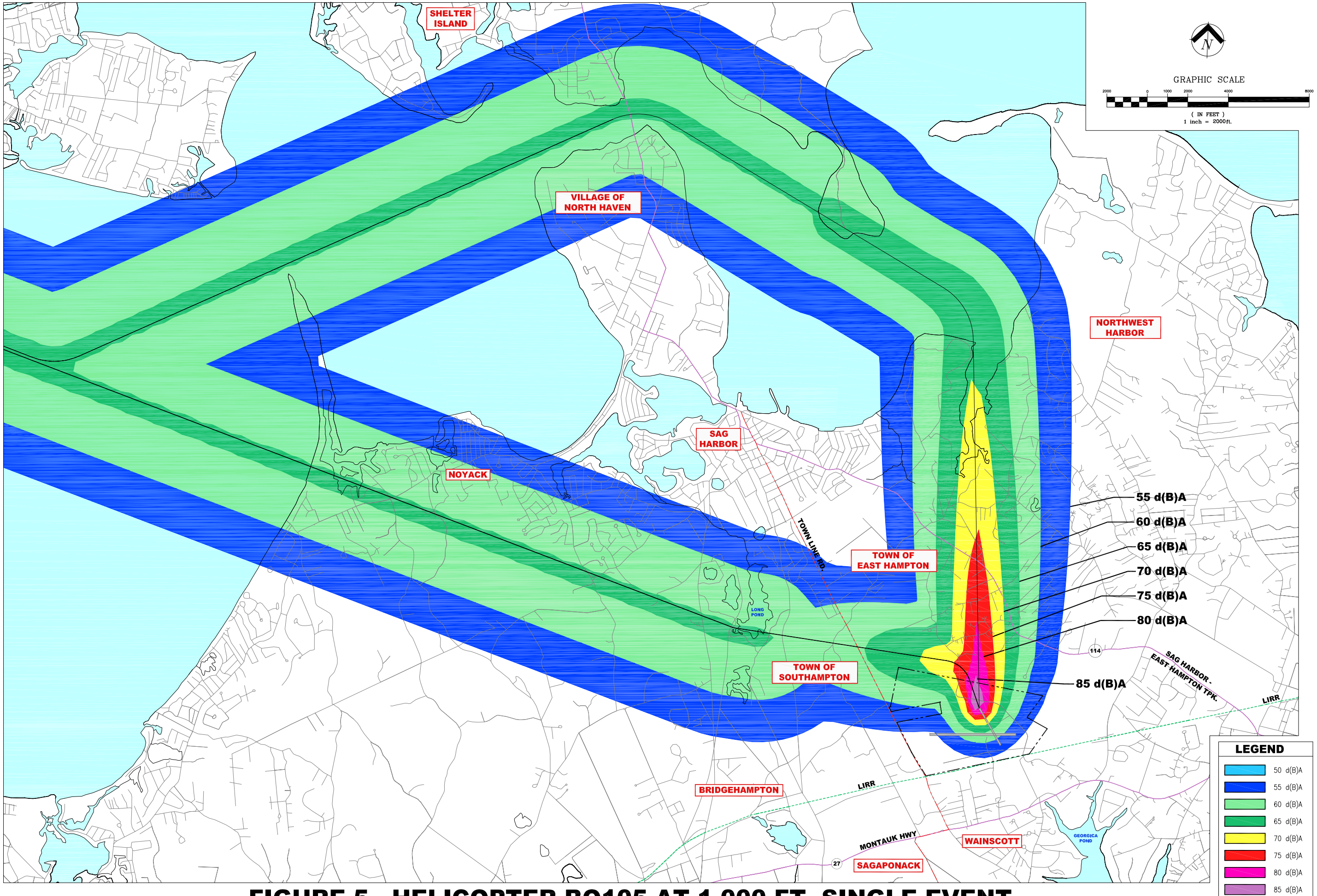


FIGURE 5 - HELICOPTER BO105 AT 1,000 FT. SINGLE EVENT

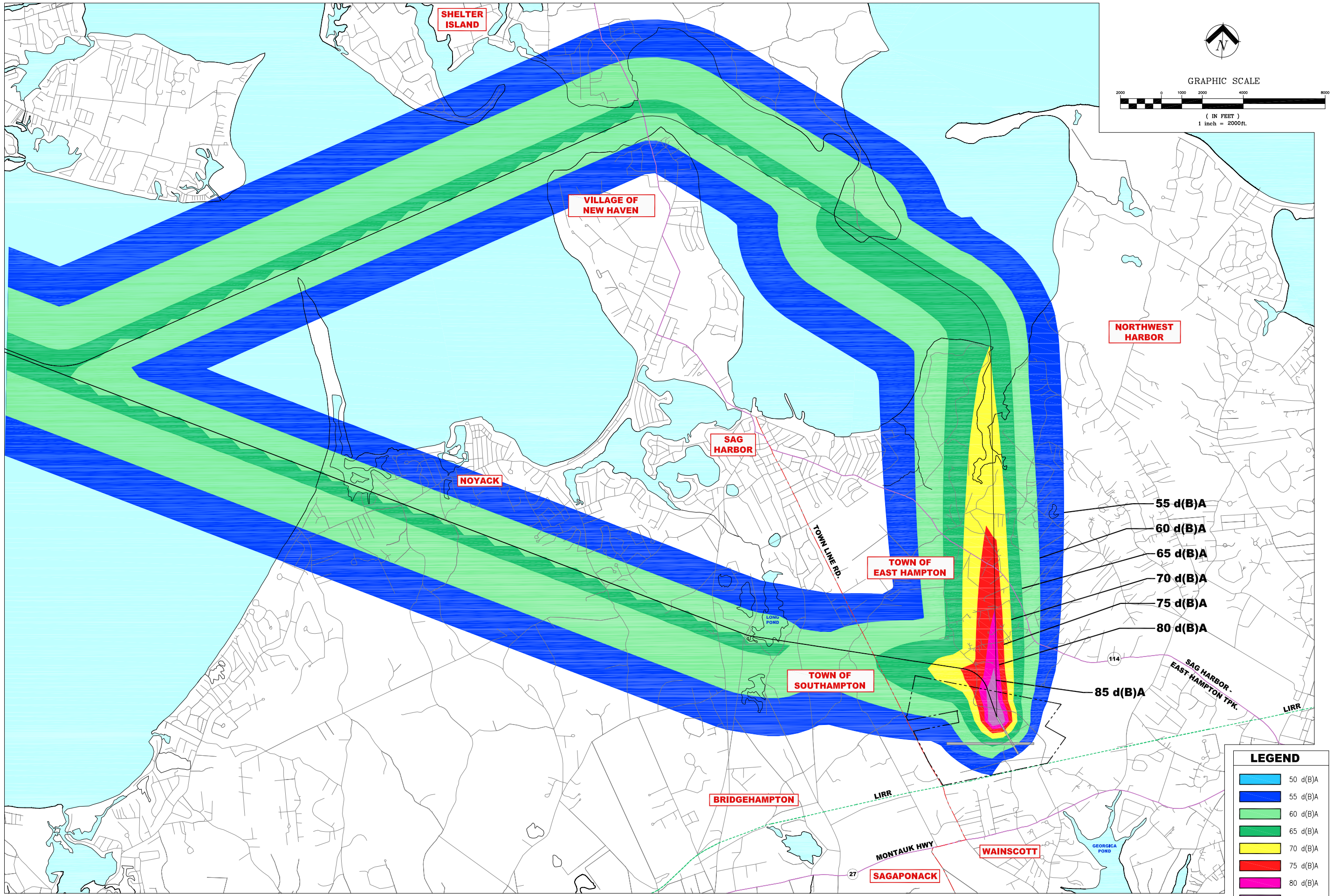


FIGURE 6 - HELICOPTER B407 AT 1,000 FT. SINGLE EVENT

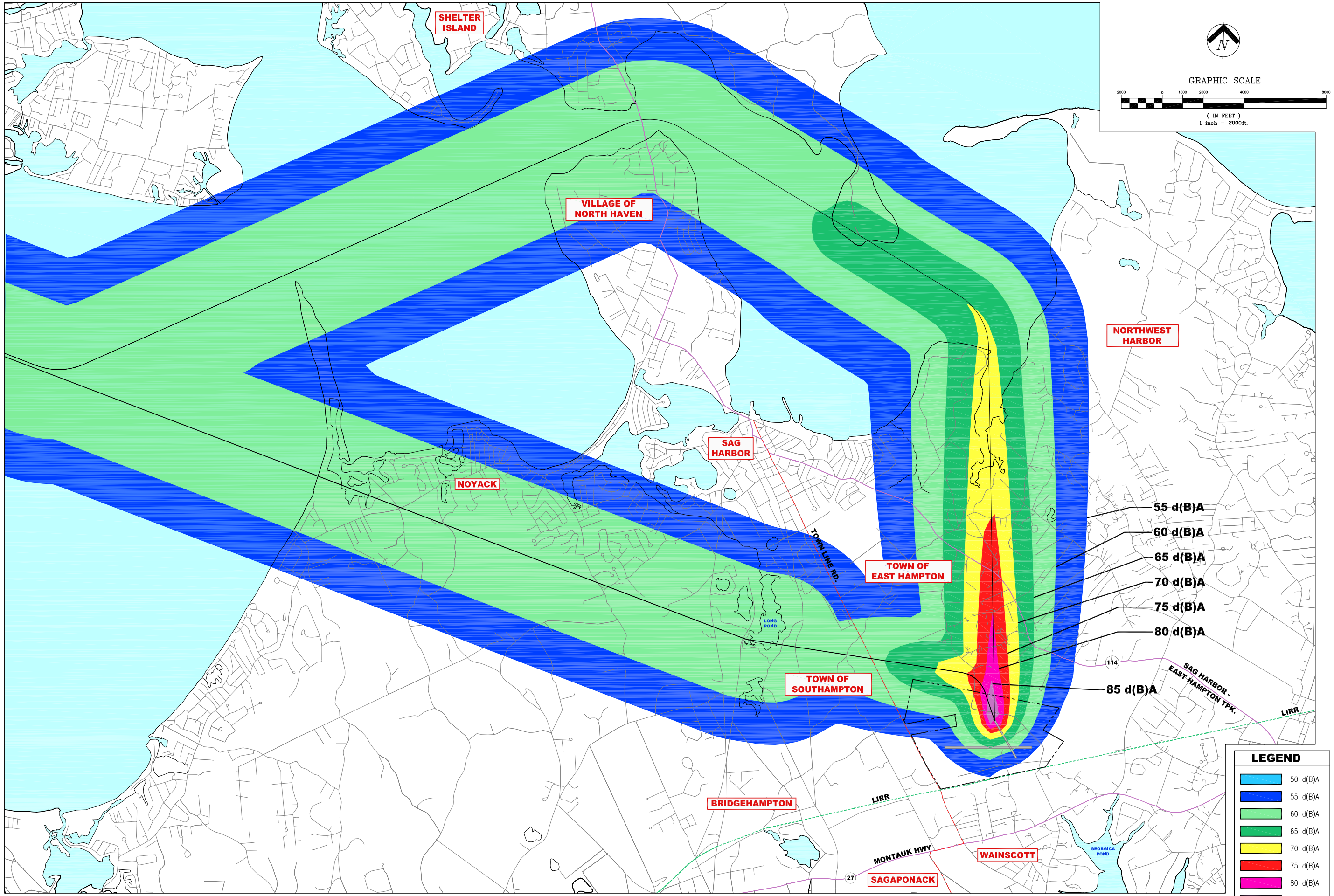


FIGURE 7 - HELICOPTER B222 AT 1,000 FT. SINGLE EVENT

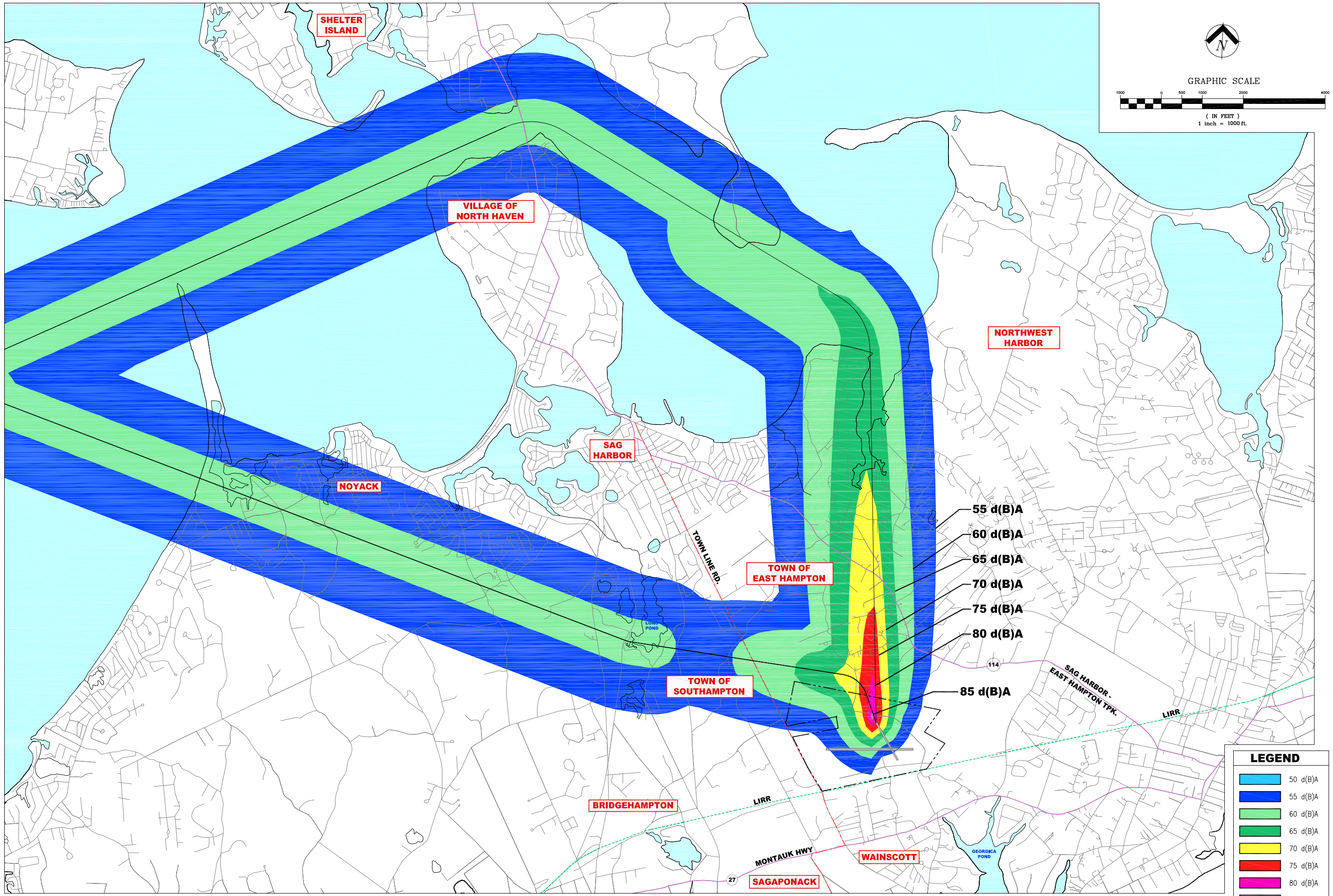


FIGURE 8 - HELICOPTER B206L AT 1,000 FT. SINGLE EVENT

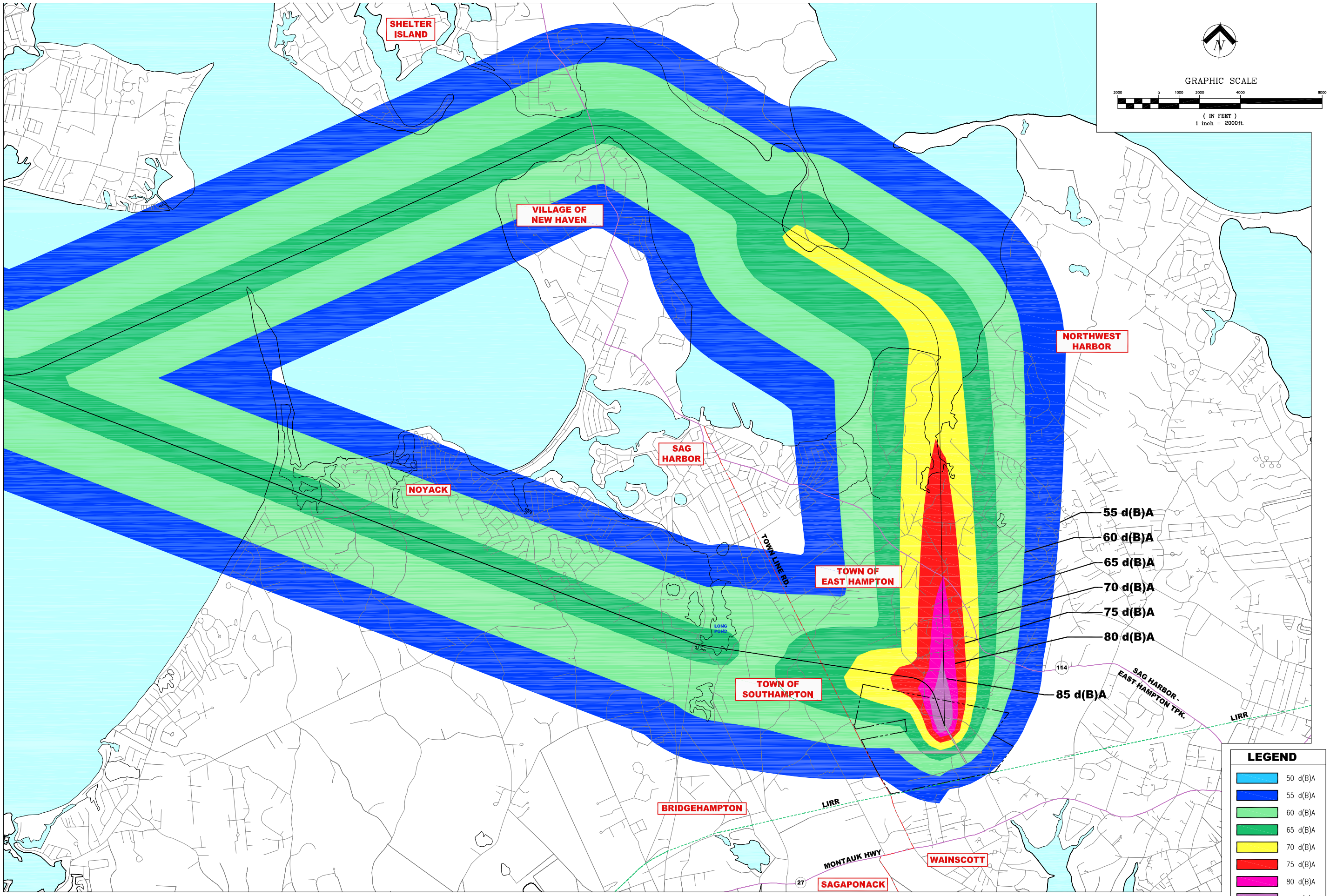


FIGURE 9 - HELICOPTER A109 AT 1,000 FT. SINGLE EVENT

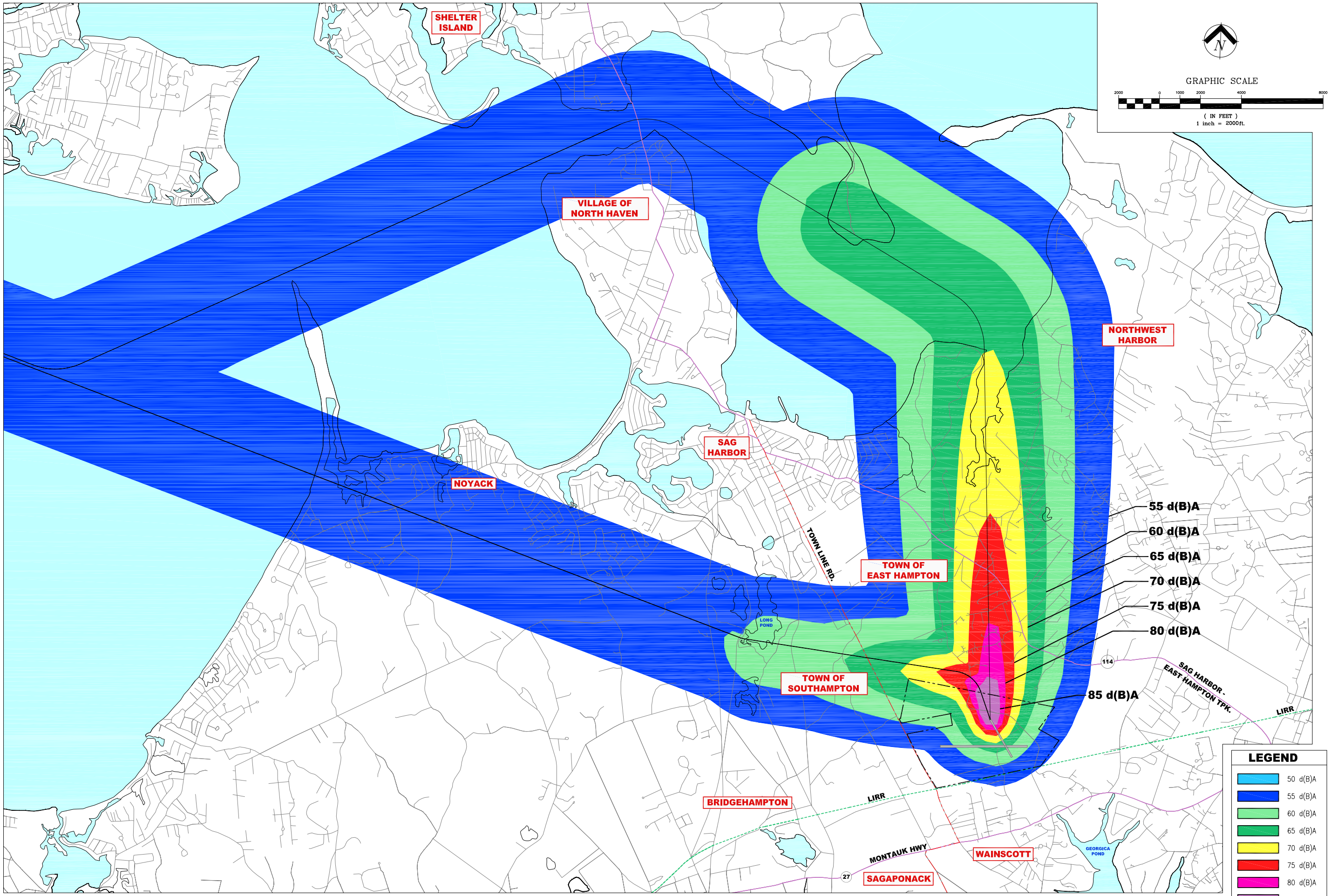
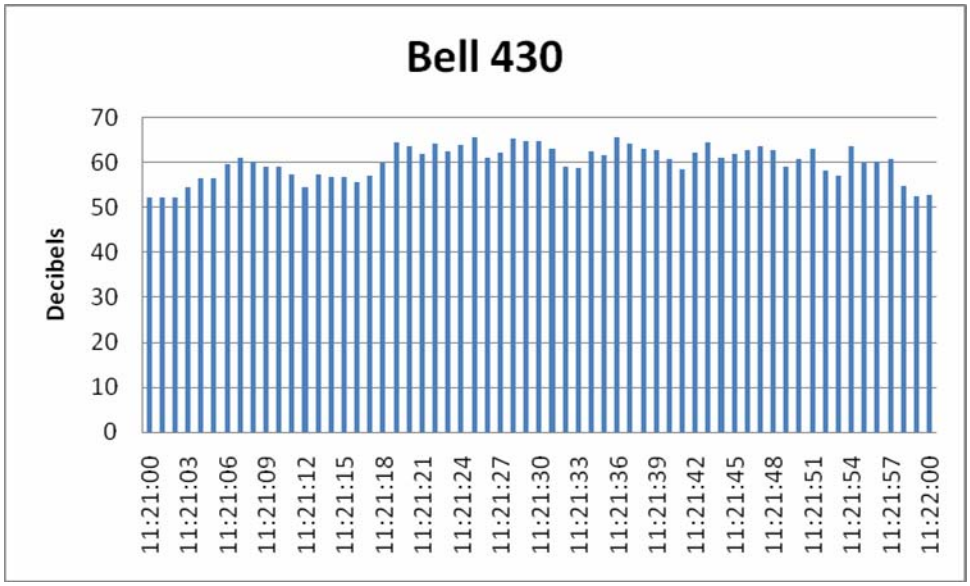


FIGURE 10 - HELICOPTER SA365 AT 1,000 FT. SINGLE EVENT

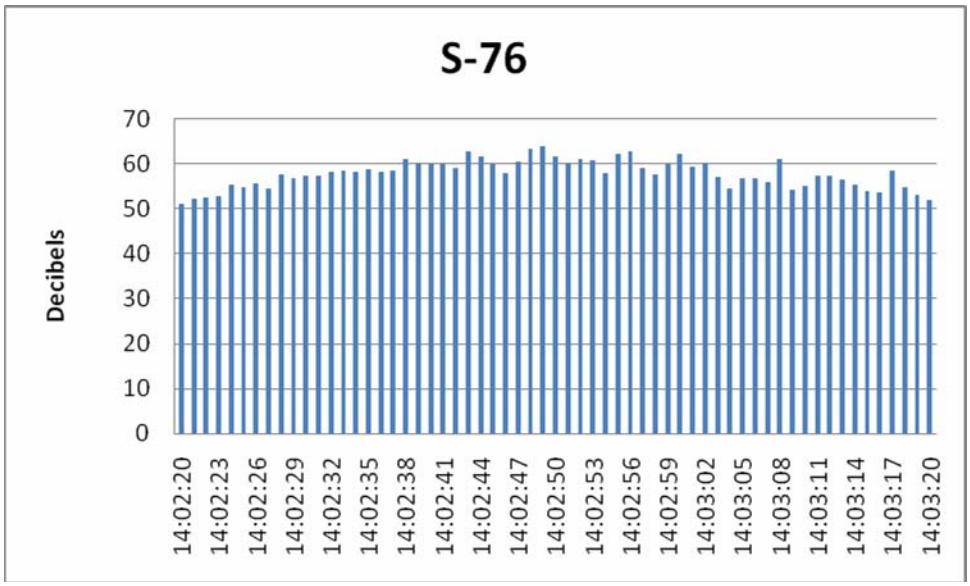
Appendix F
Plots of Helicopter Noise Events (September 2008) – Jessup's Neck and Barcelona's Neck

Plots of Helicopter Noise Events - Riley House September 18 through 22, 2008

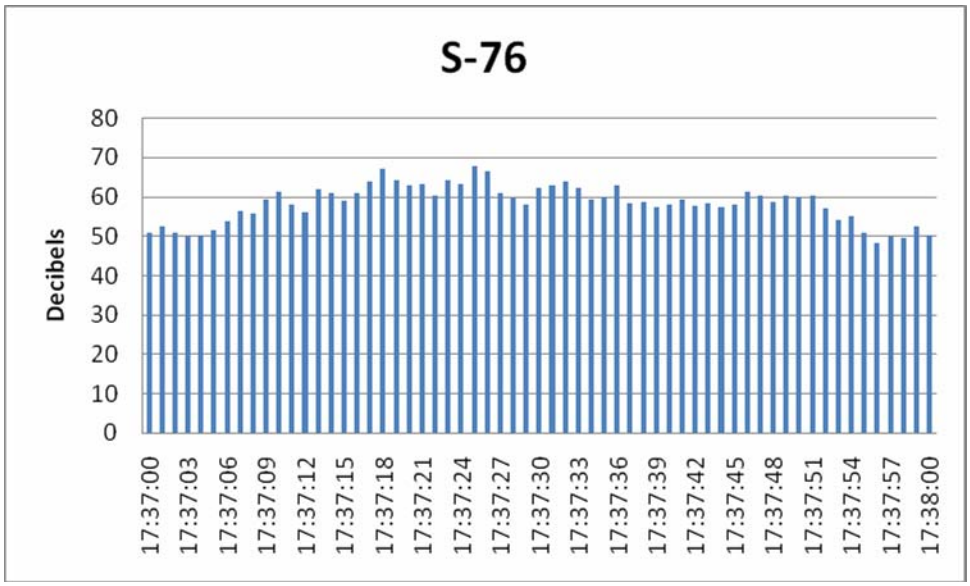
1. September 19, 2008, 11:21
Peak Noise Level = 65.7 dB
Altitude: 2,345 ft.



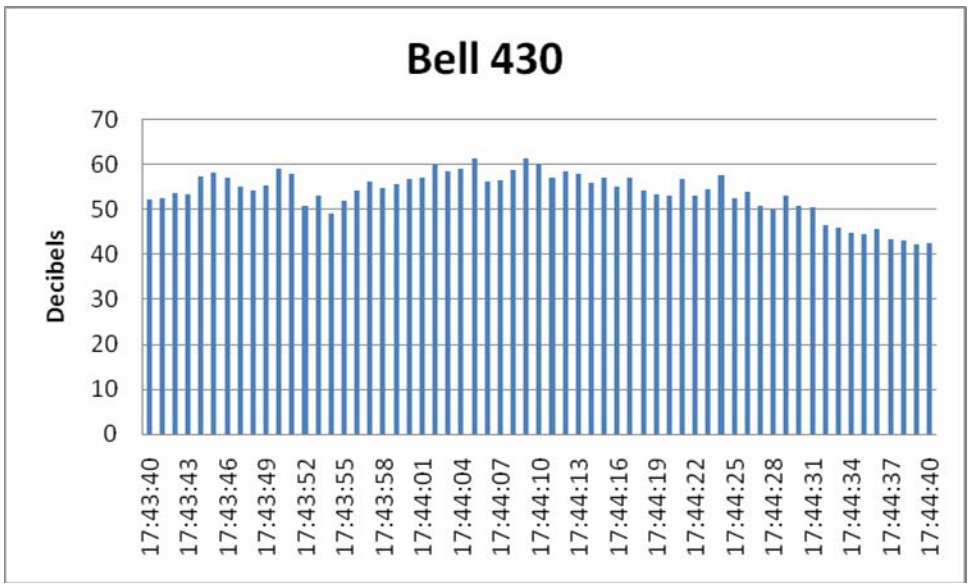
2. September 19, 2008, 14:02
Peak Noise Level = 62.7 dB
Altitude: 2,500 ft.



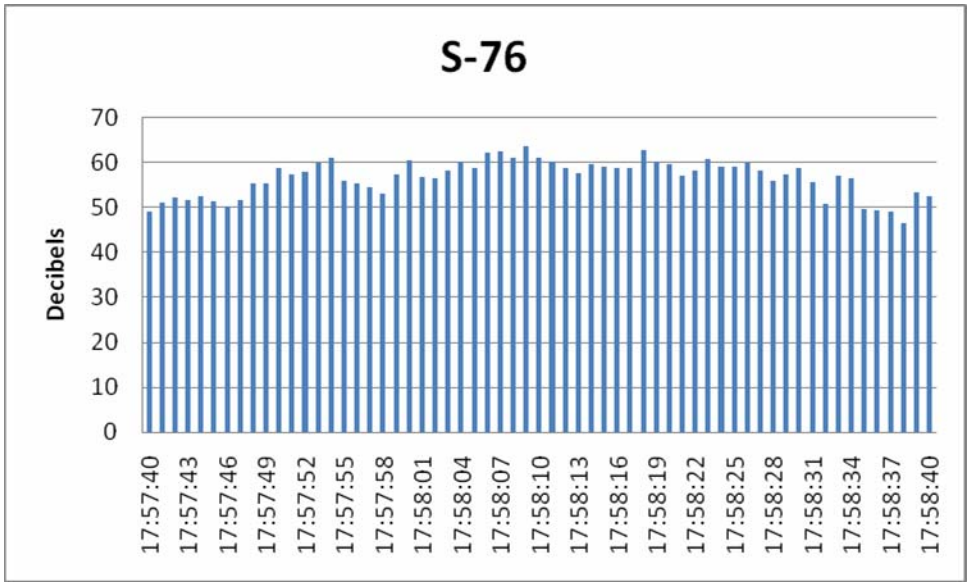
3. September 19, 17:37
Peak Noise Level = 67.0 dB
Altitude: 2,500 ft.



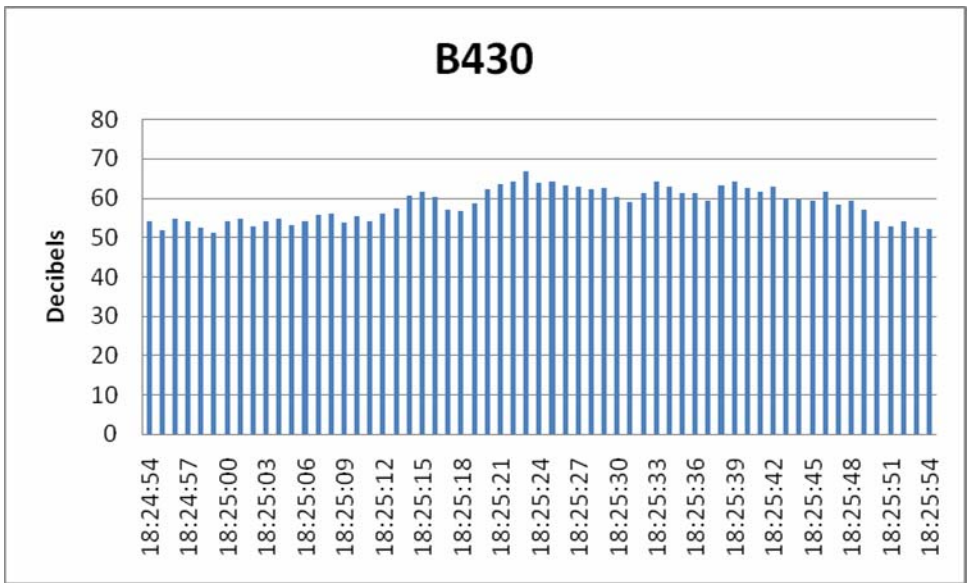
4. September 19, 17:34
Peak Noise Level = 61.4 dB
Altitude: 2,500 ft.



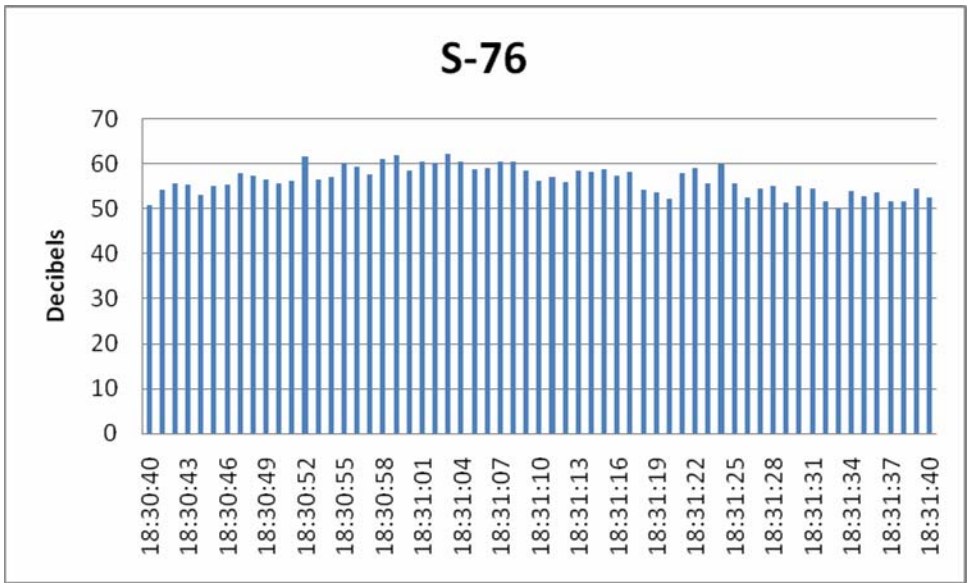
5. September 19, 2008, 17.57
Peak Noise Level = 63.7 dB
Altitude: 2,900 ft.



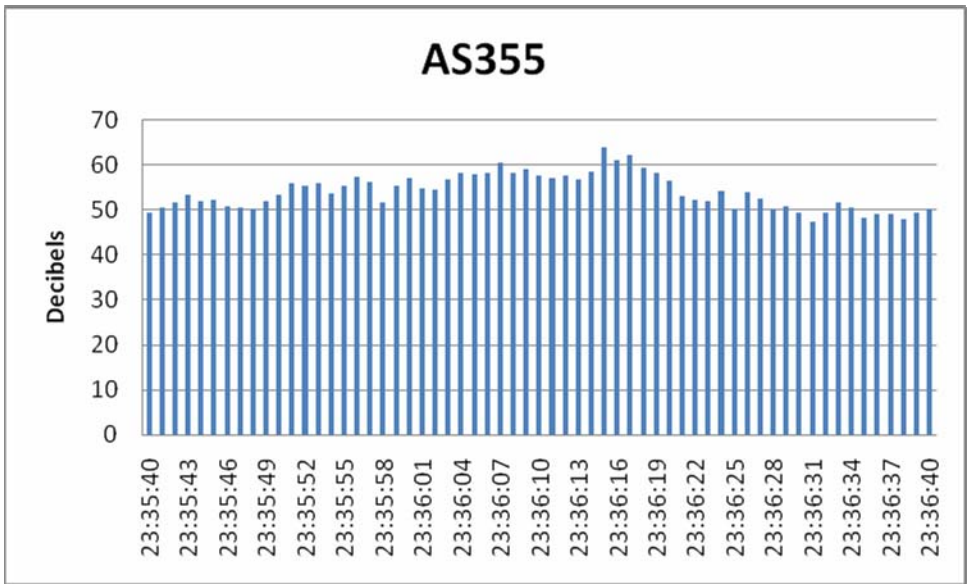
6. September 19, 2008, 18:25
Peak Noise Level = 64.3
Altitude: 1,500 ft.



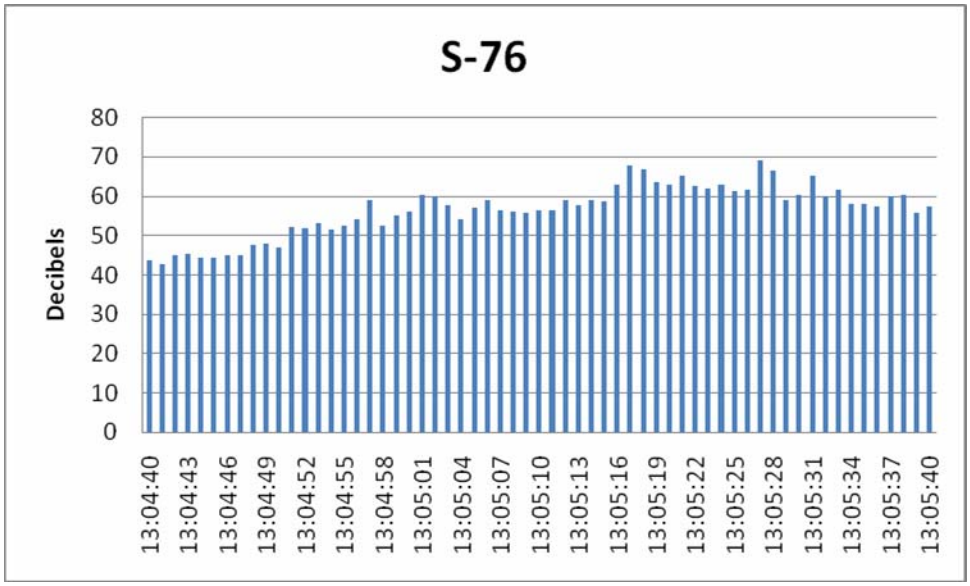
7. September 19, 2008, 18:30
Peak Noise Level= 62.3
Altitude: 300 ft.



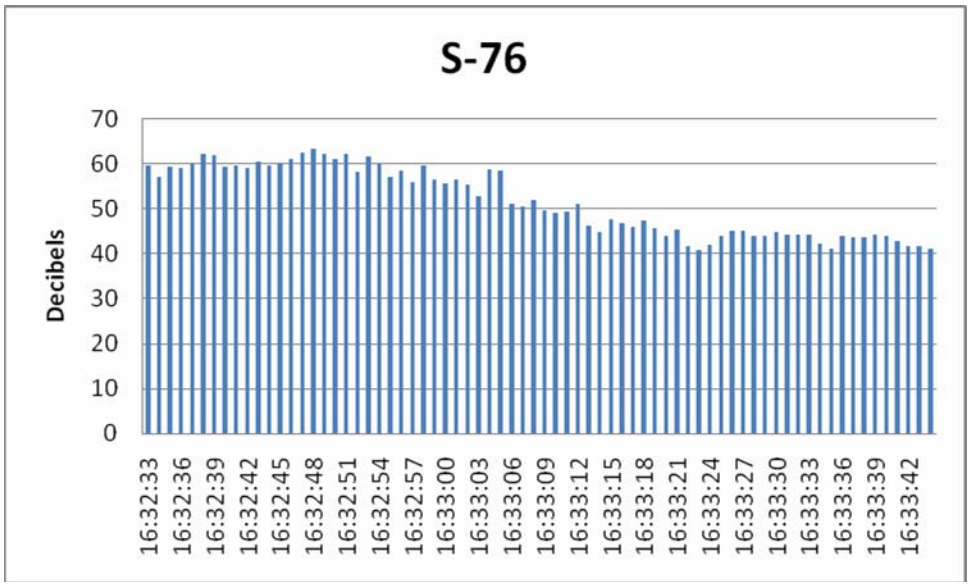
8. September 19, 2008, 23:35
Peak Noise Level = 64.3
Altitude: 2,200 ft.



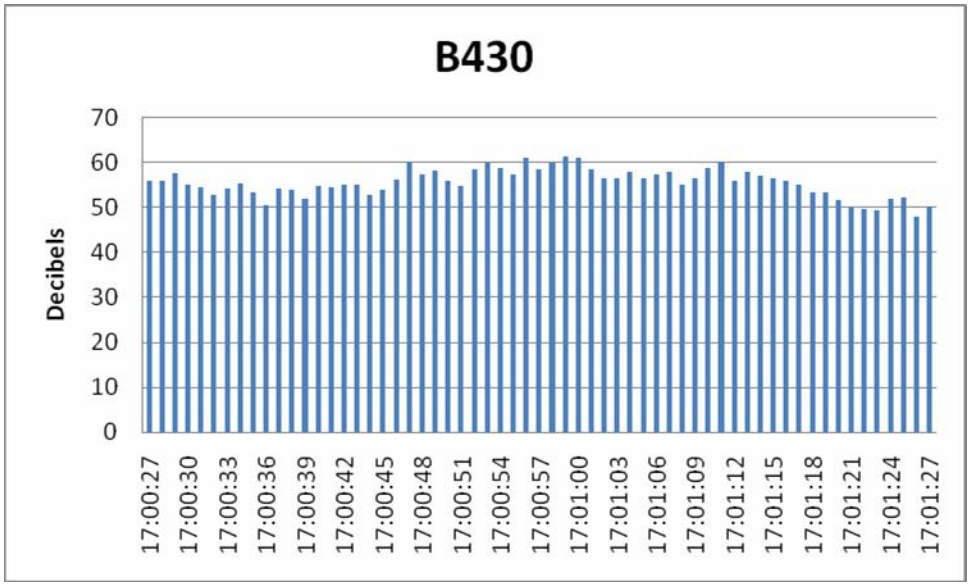
9. September 20, 2008, 13:05
Peak Noise Level = 67.7
Altitude: 2,500 ft.



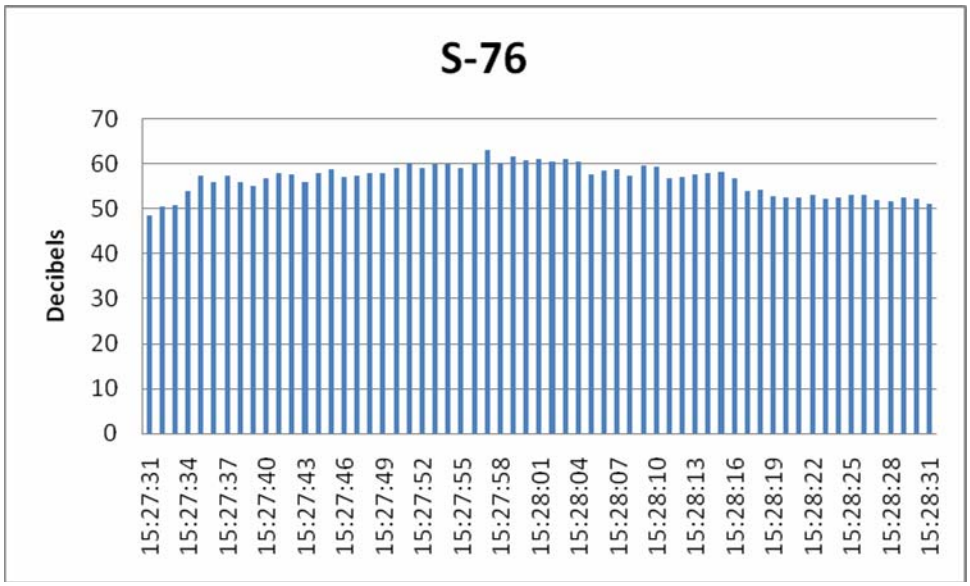
10. September 20, 2008, 16:32
Peak Noise Level = 63.3
Altitude: 2,500 ft.



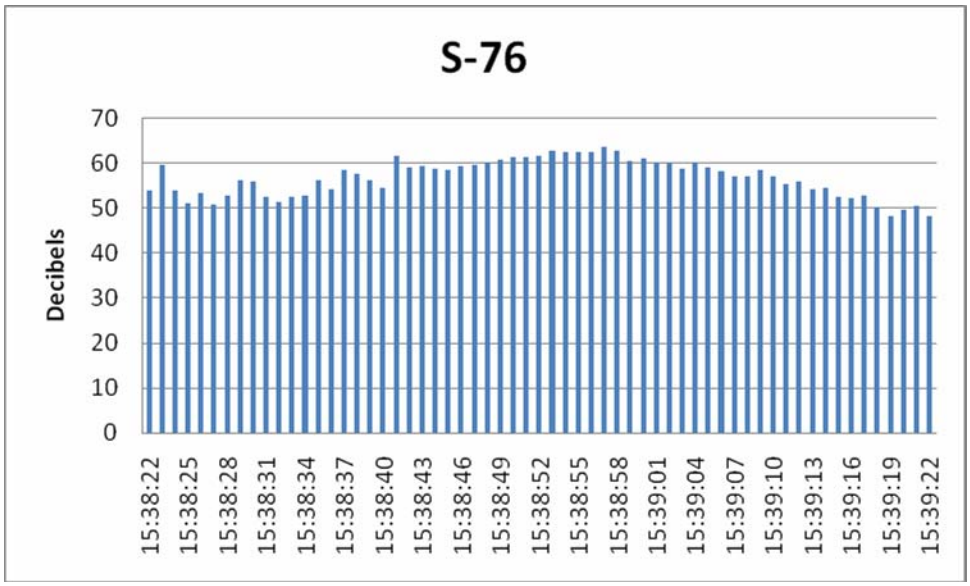
11. September 20, 2008, 17:00
Peak Noise Level = 61.3
Altitude: 1,900 ft.



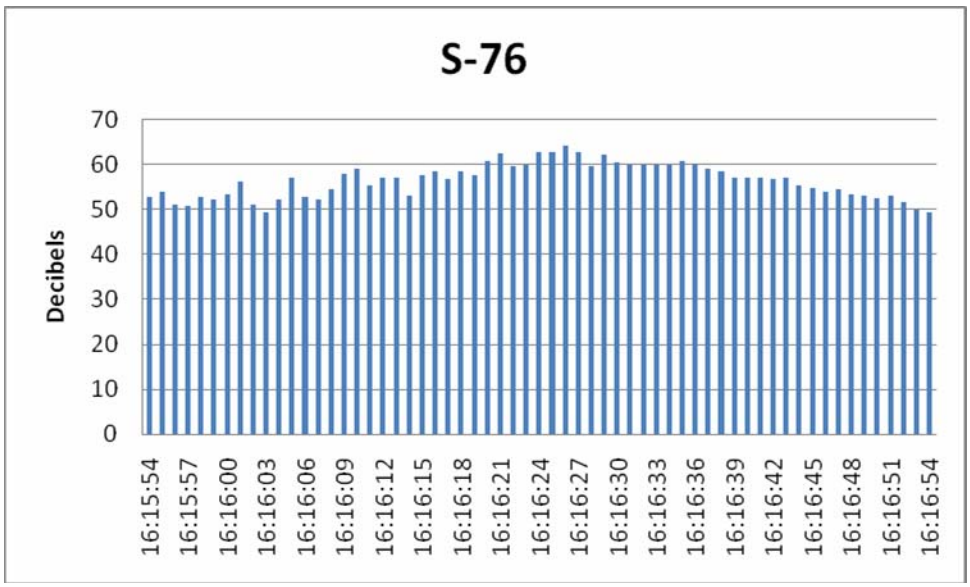
12. September 21, 2008, 15:27
Peak Noise Level = 61.7
Altitude: 2,800 ft.



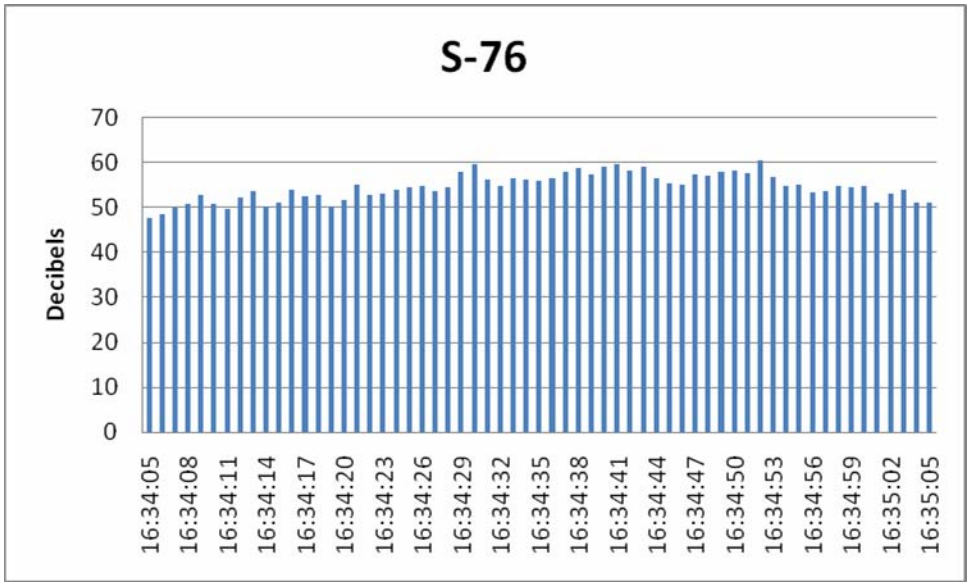
13. September 21, 2008, 15:38
Peak Noise Level = 63.5
Altitude: 2,700 ft.



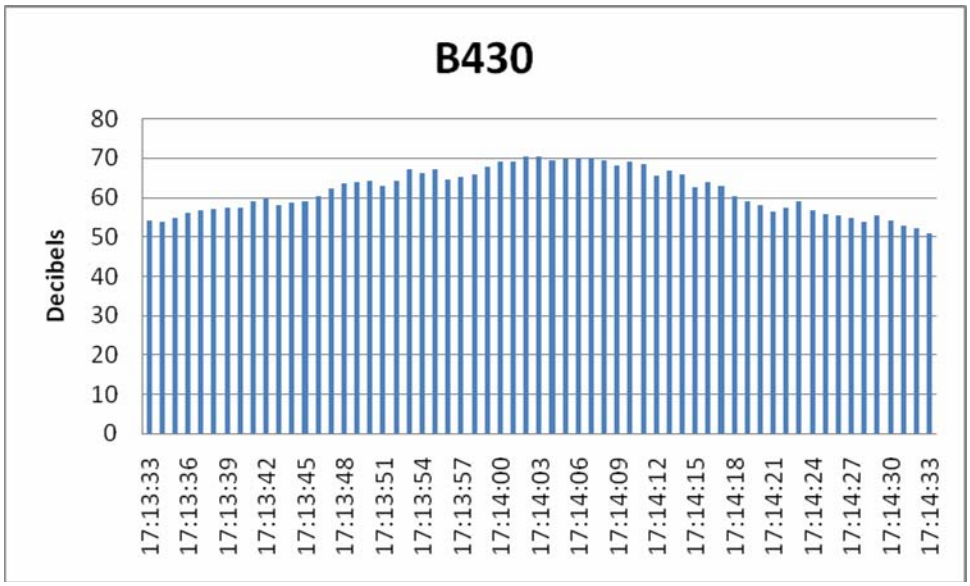
14. September 21, 2008, 16:15
Peak Noise Level = 62.5
Altitude: 2,600 ft.



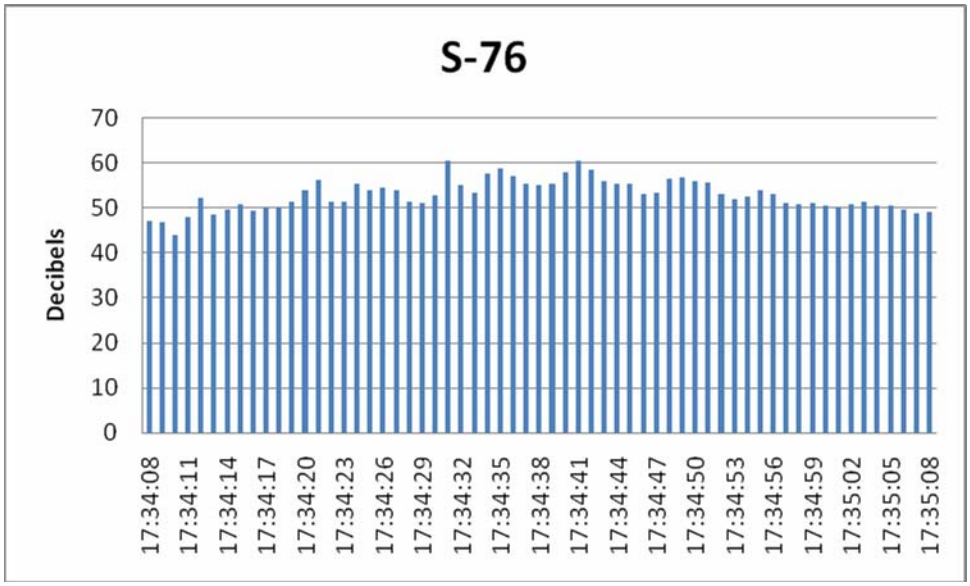
15. September 21, 2008, 16:34
Peak Noise Level = 60.5
Altitude: 2,695 ft.



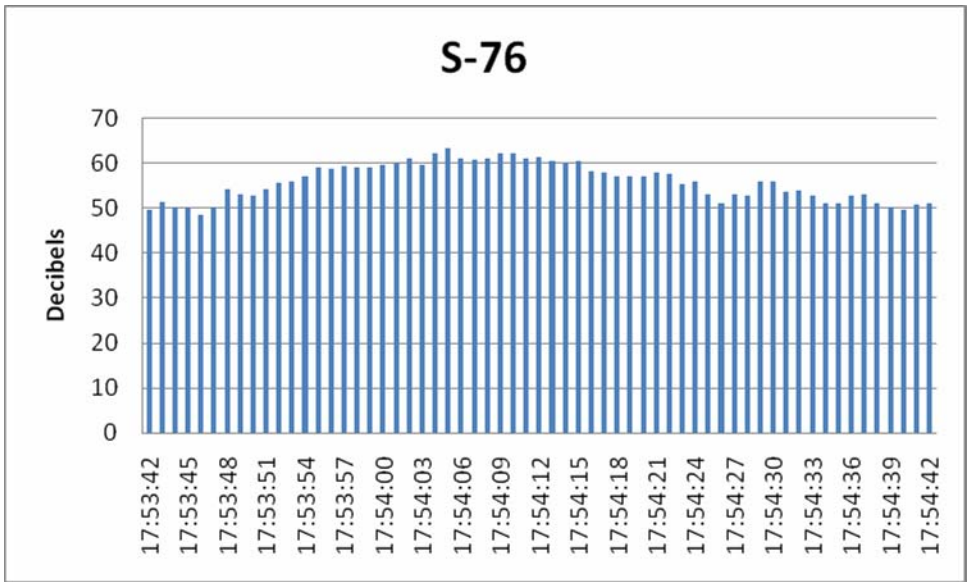
16. September 21, 2008, 17:13
Peak Noise Level = 70.4
Altitude: 1,600 ft.



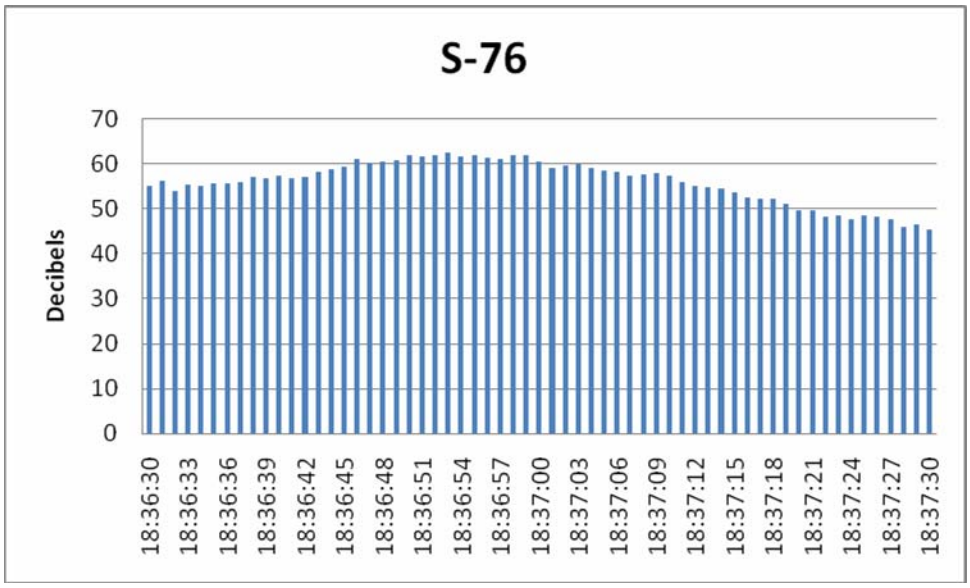
17. September 21, 2008, 17:34
Peak Noise Level = 56.8
Altitude: 2,400 ft.



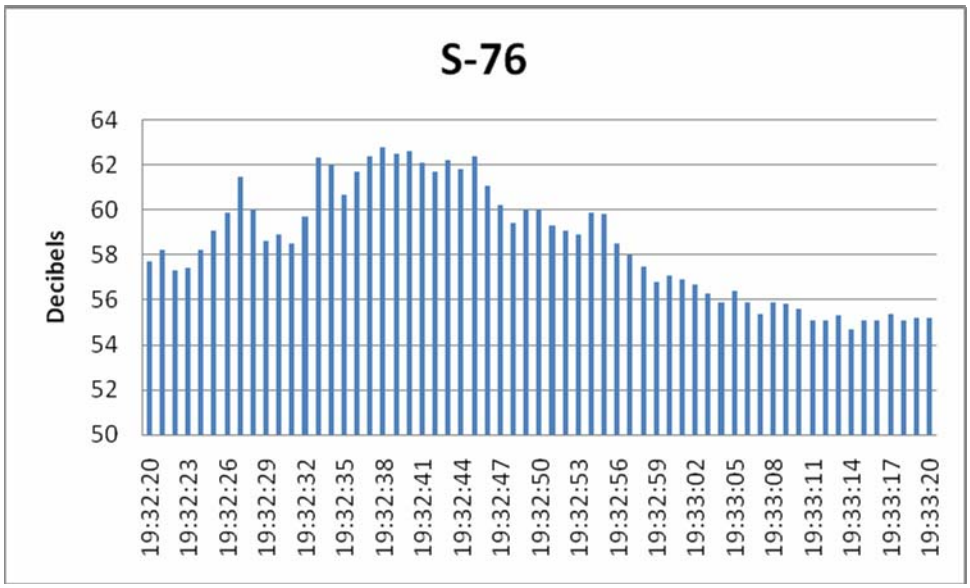
18. September 21, 2008, 17:53
Peak Noise Level = 63.3
Altitude: 2,400 ft.



19. September 21, 2008, 18:37
Peak Noise Level = 61.8
Altitude: 2,500 ft.

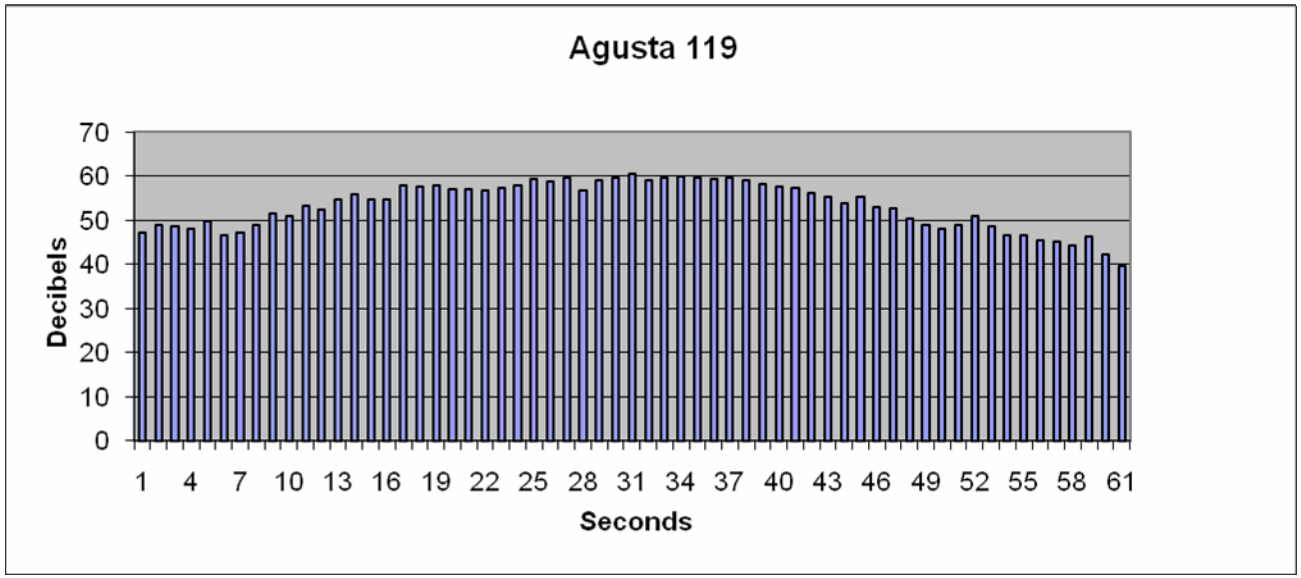


20. September 21, 2008, 19:32
Peak Noise Level = 62.6
Altitude: 2,500 ft.

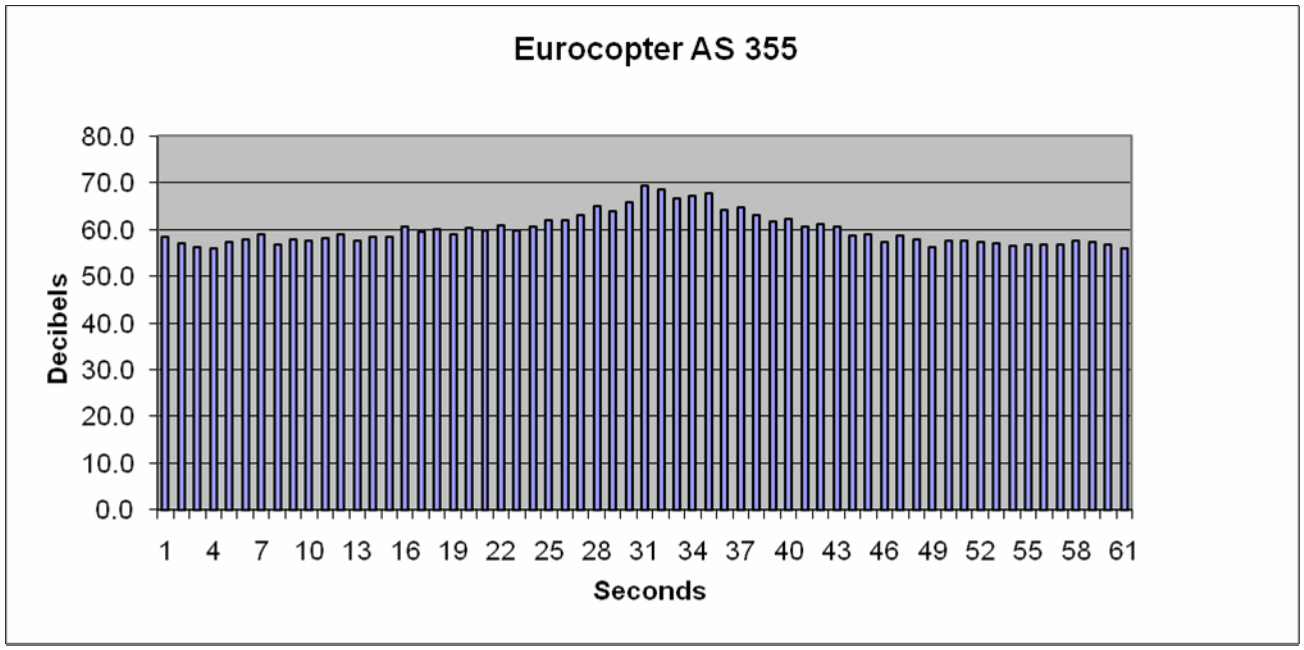


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	1	
Date	17-Sep	
Time (24 hr)	15:52	
Peak Noise Level	60.5	dB
Altitude	1,878	Feet

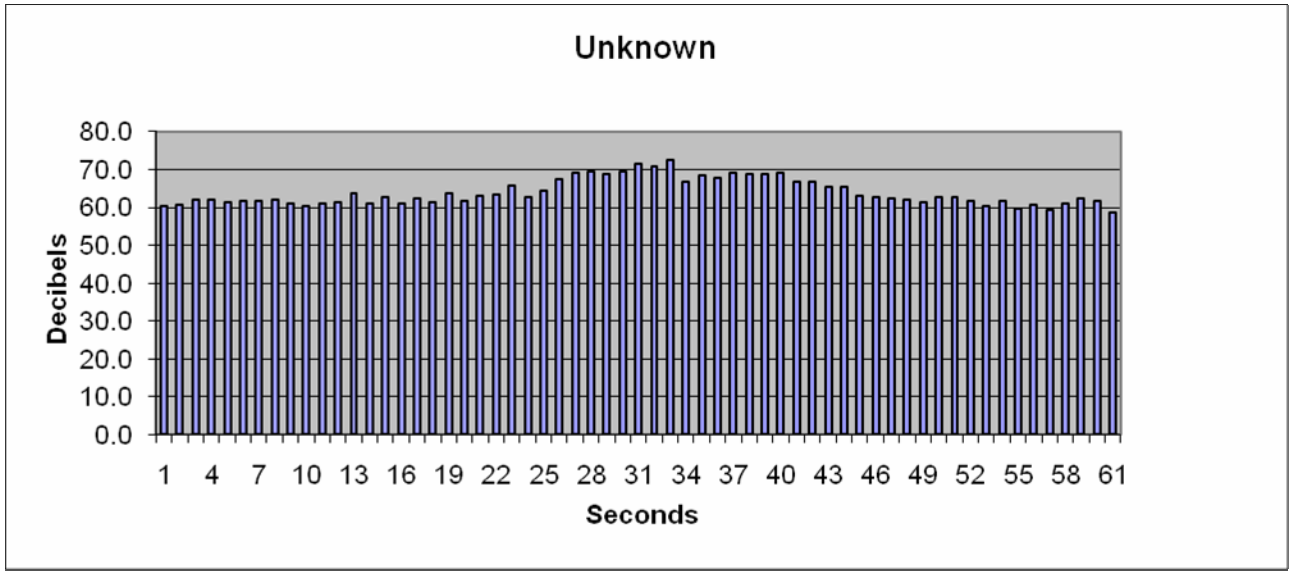


Event	2	
Date	18-Sep	
Time (24 hr)	8:57	
Peak Noise Level	69.3	dB
Altitude	1,445	Feet

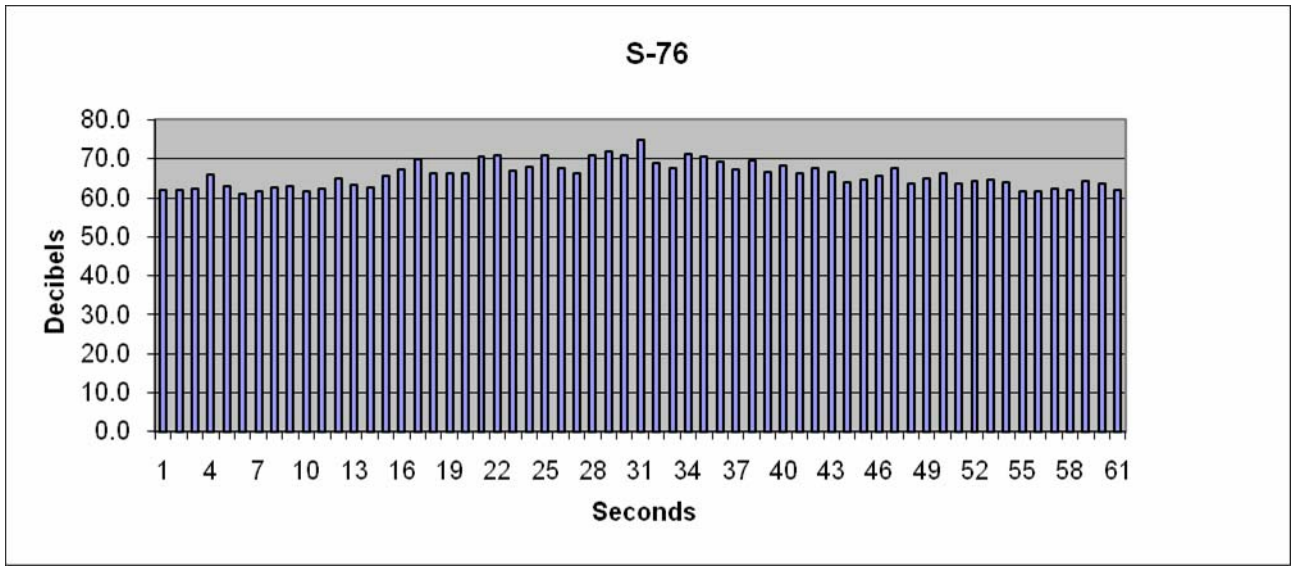


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	3	
Date	18-Sep	
Time (24 hr)	15:52	
Peak Noise Level	72.6	dB
Altitude	2,045	Feet

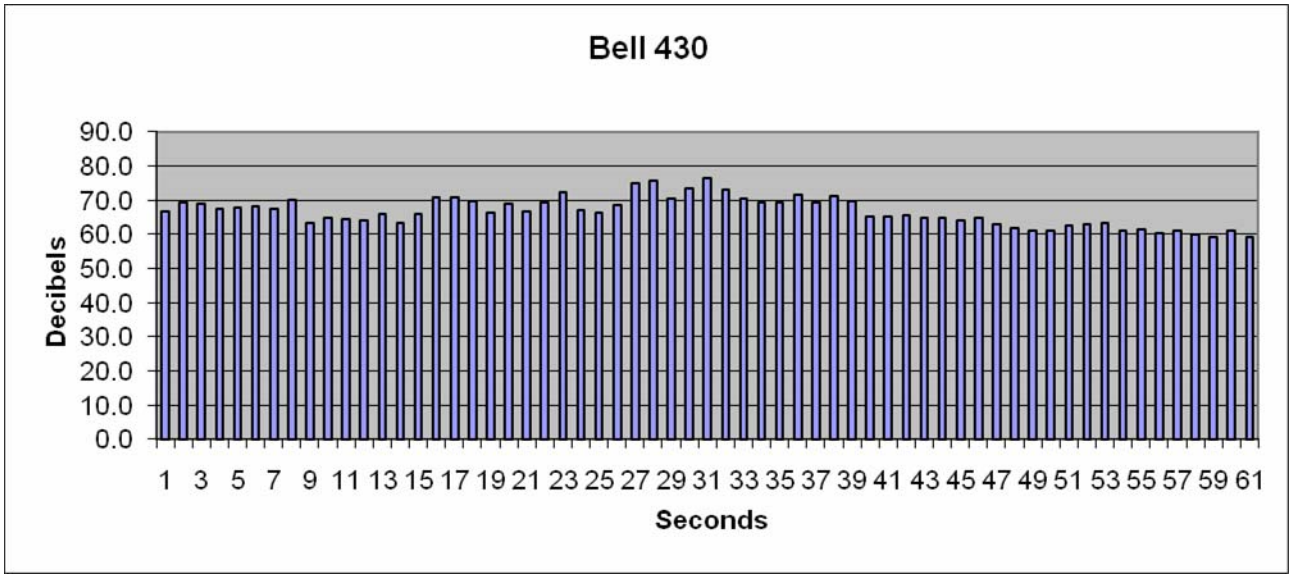


Event	4	
Date	19-Sep	
Time (24 hr)	8:35	
Peak Noise Level	74.9	dB
Altitude	2,345	Feet

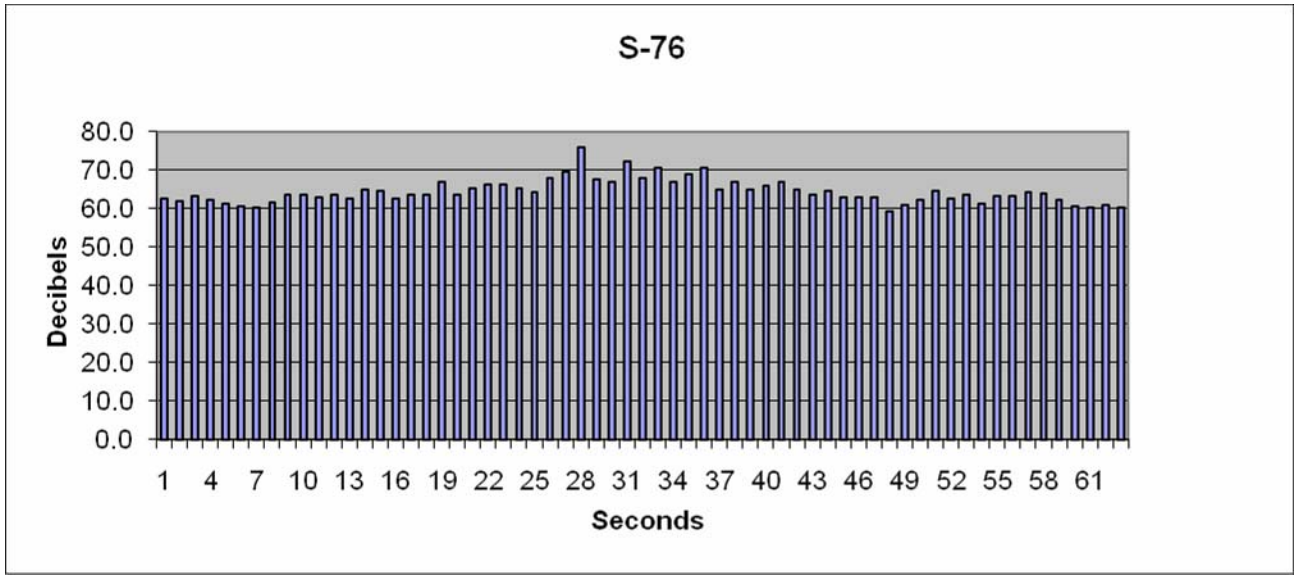


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	5	
Date	19-Sep	
Time (24 hr)	10:50	
Peak Noise Level	76.5	dB
Altitude	1,945	

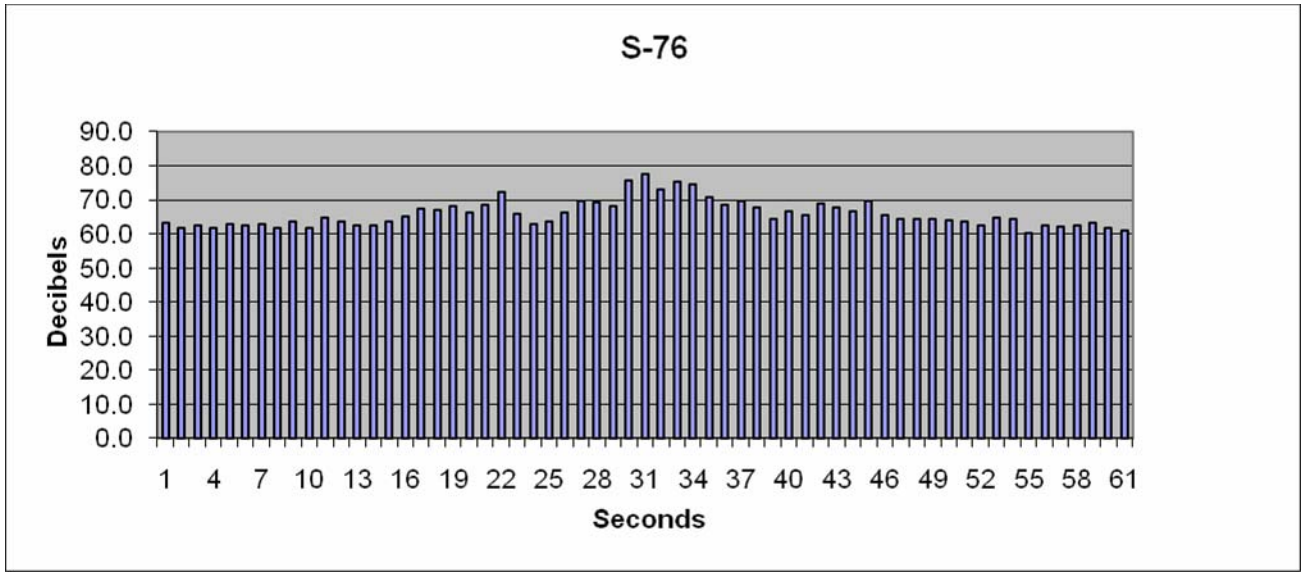


Event	6	
Date	19-Sep	
Time (24 hr)	11:59	
Peak Noise Level	75.9	dB
Altitude	1,670	

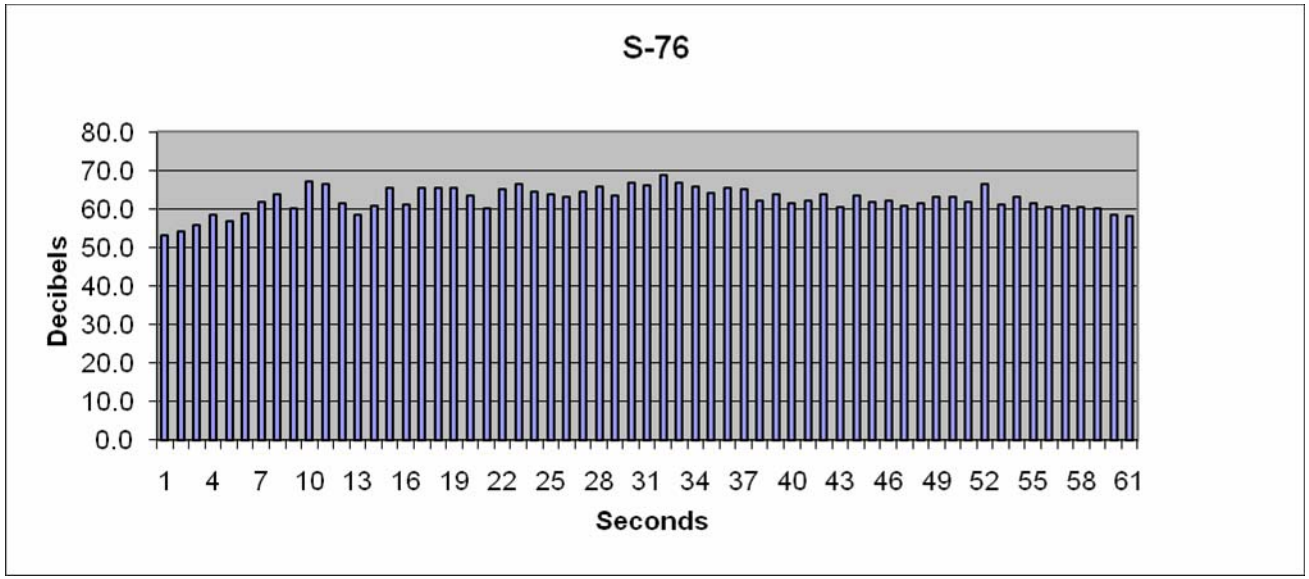


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	7	
Date	19-Sep	
Time (24 hr)	12:32	
Peak Noise Level	77.5	dB
Altitude	2,245	

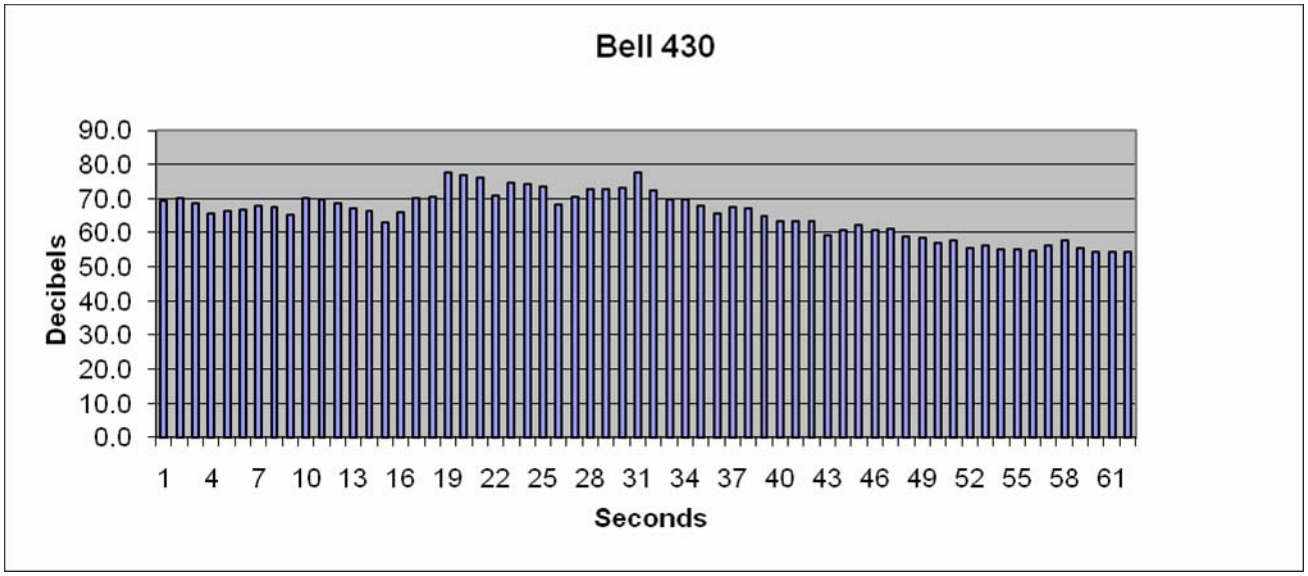


Event	8	
Date	19-Sep	
Time (24 hr)	16:14	
Peak Noise Level	68.9	dB
Altitude	1,845	

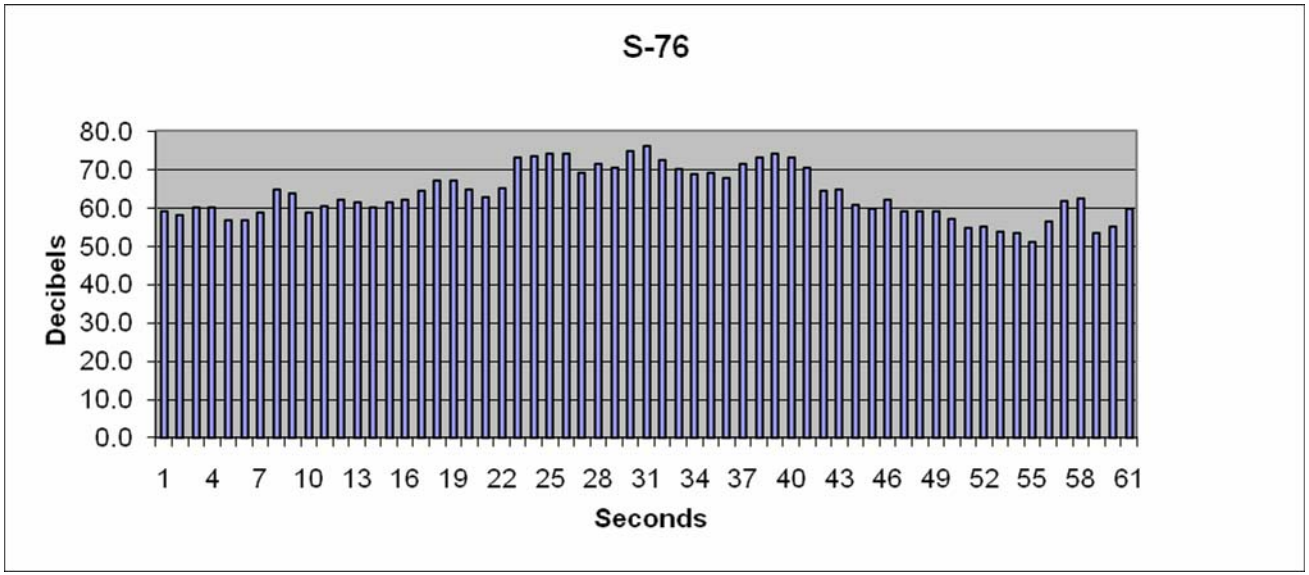


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	9	
Date	19-Sep	
Time (24 hr)	17:12	
Peak Noise Level	77.5	dB
Altitude	1,845	

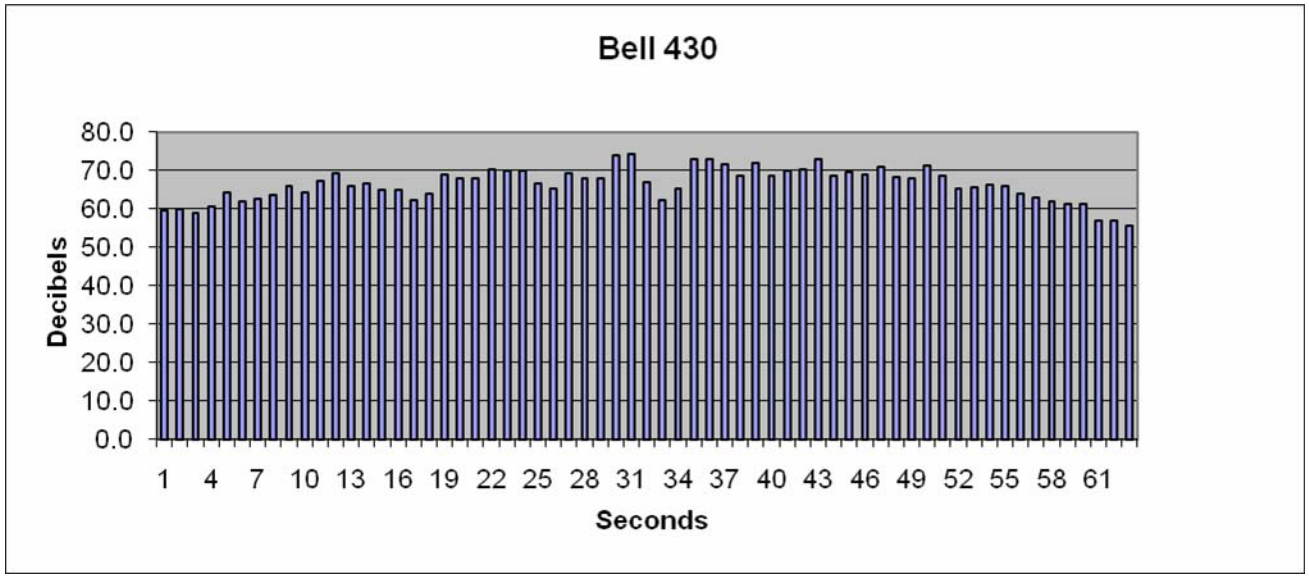


Event	10	
Date	19-Sep	
Time (24 hr)	17:43	
Peak Noise Level	75.9	dB
Altitude	1,770	

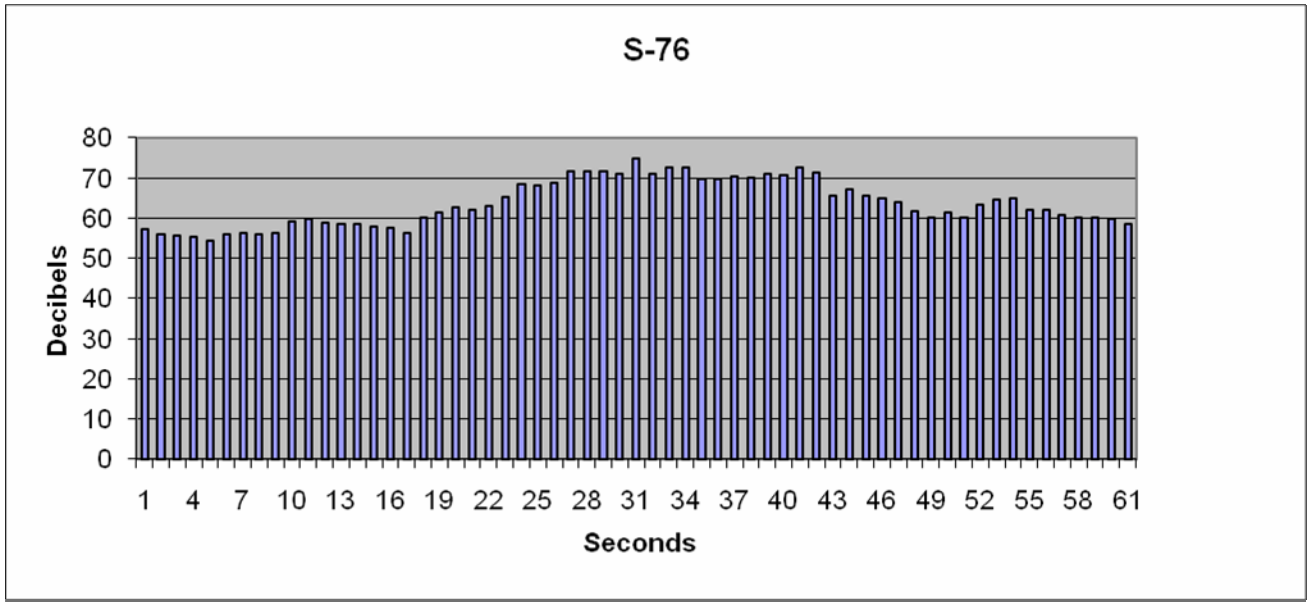


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	11	
Date	19-Sep	
Time (24 hr)	18:16	
Peak Noise Level	74.2	dB
Altitude	1,861	

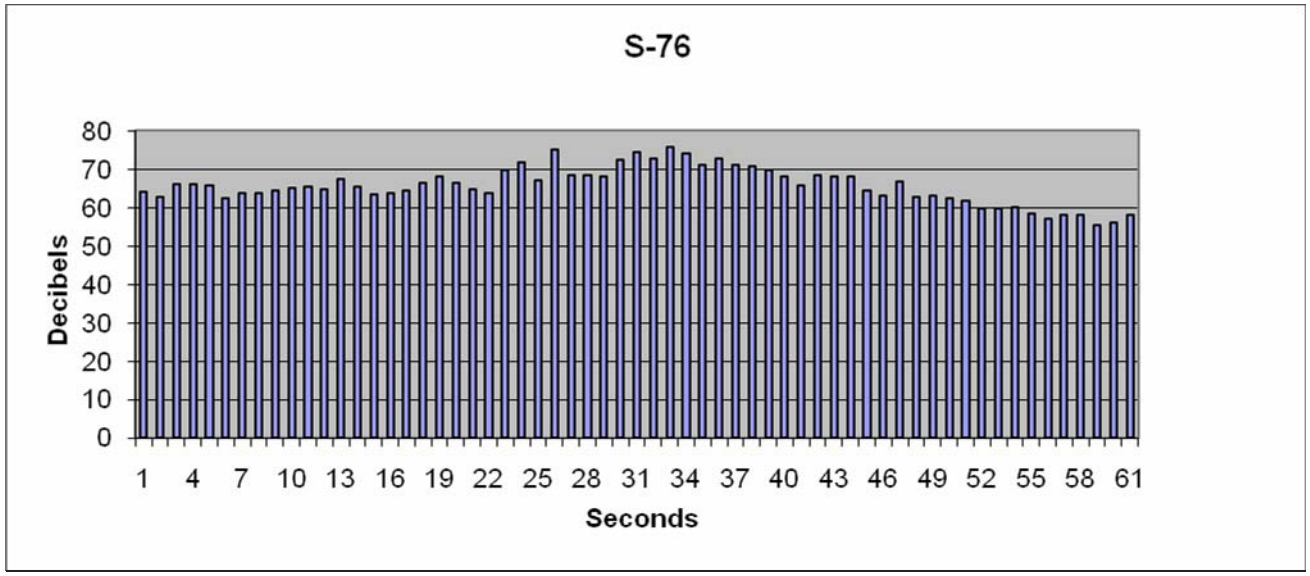


Event	12	
Date	20-Sep	
Time (24 hr)	11:11	
Peak Noise Level	74.9	dB
Altitude	1,711	

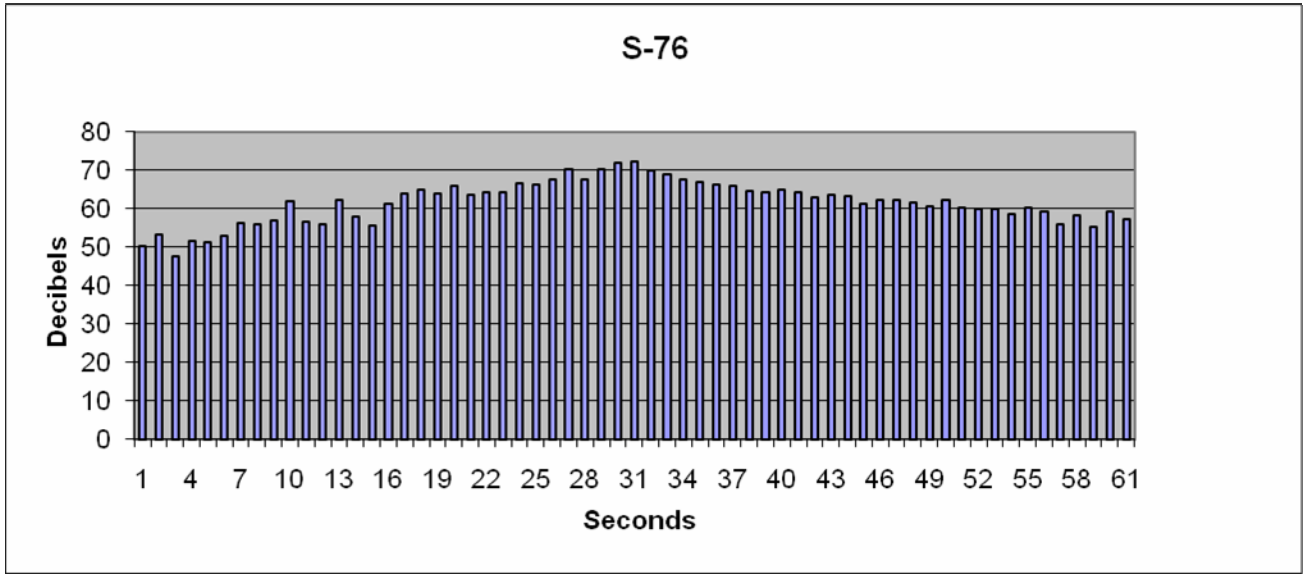


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	13	
Date	20-Sep	
Time (24 hr)	12:53	
Peak Noise Level	75.6	dB
Altitude	1,645	

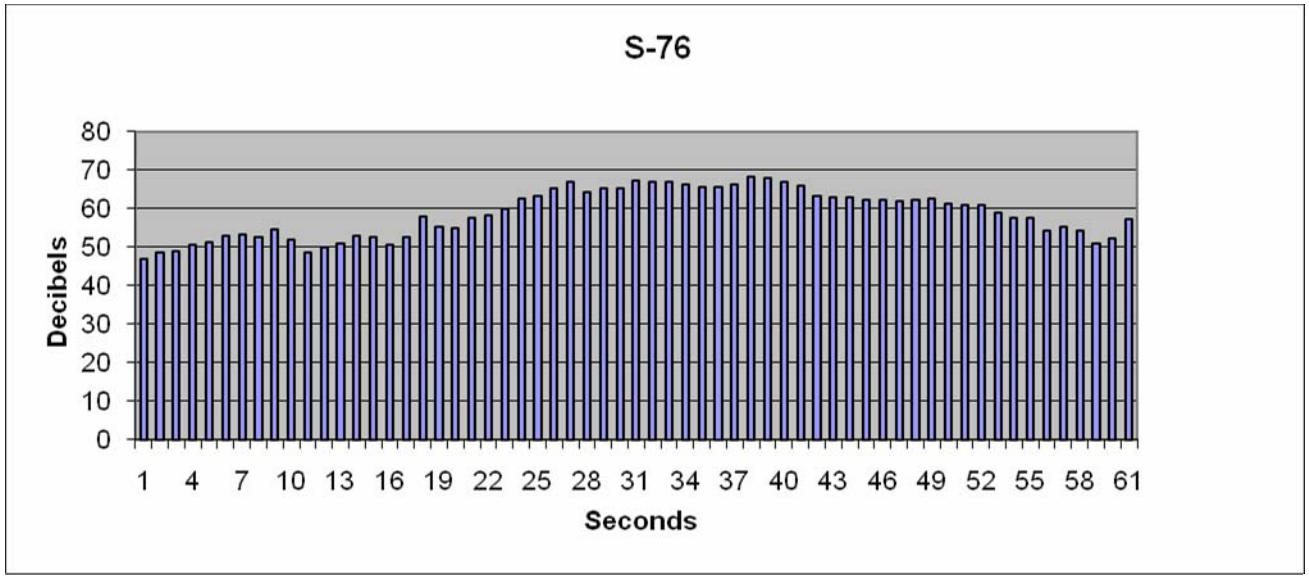


Event	14	
Date	20-Sep	
Time (24 hr)	16:19	
Peak Noise Level	72.1	dB
Altitude	2,245	

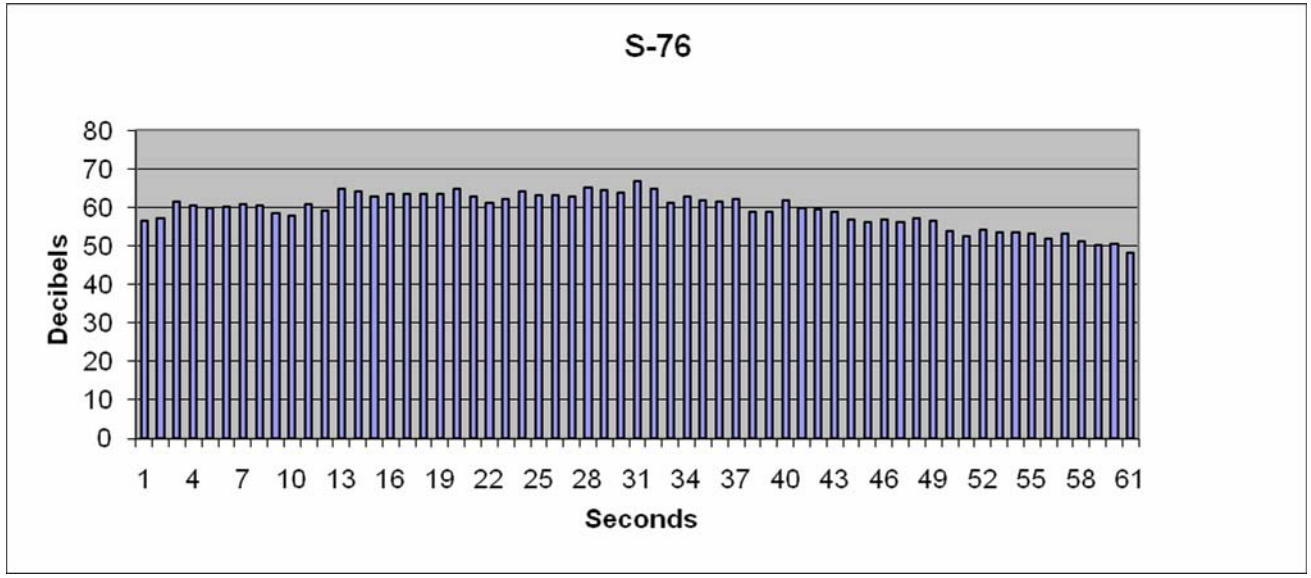


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	15	
Date	21-Sep	
Time (24 hr)	11:14	
Peak Noise Level	68.3	dB
Altitude	2,145	

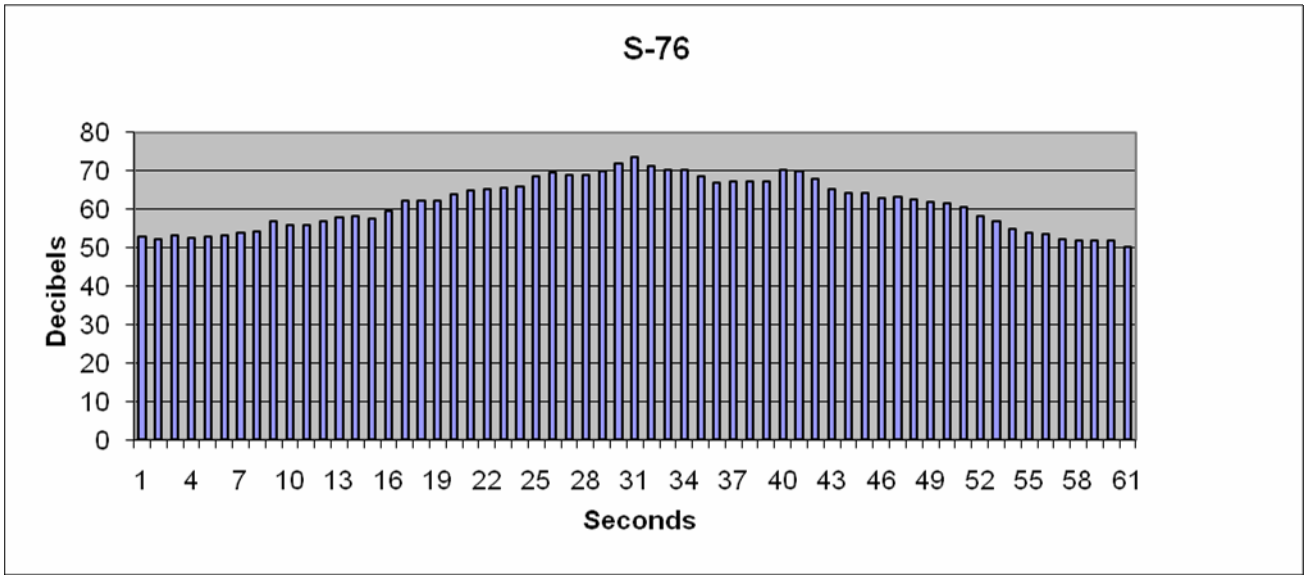


Event	16	
Date	21-Sep	
Time (24 hr)	15:34	
Peak Noise Level	66.8	dB
Altitude	1,945	

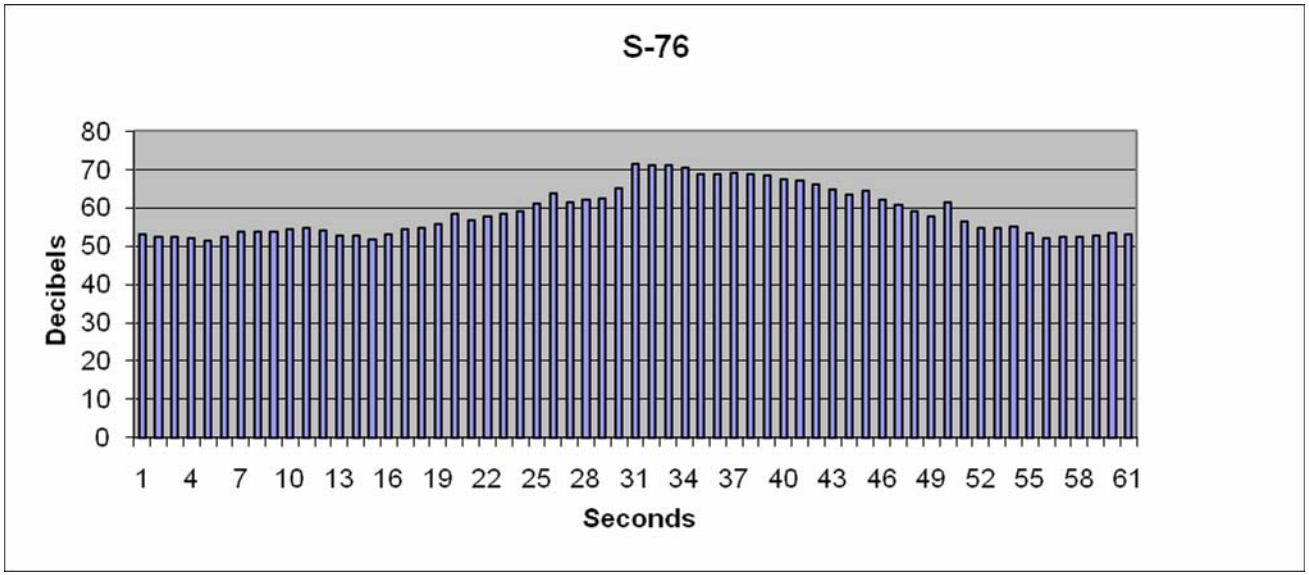


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	17	
Date	21-Sep	
Time (24 hr)	16:11	
Peak Noise Level	73.4	dB
Altitude	1945	

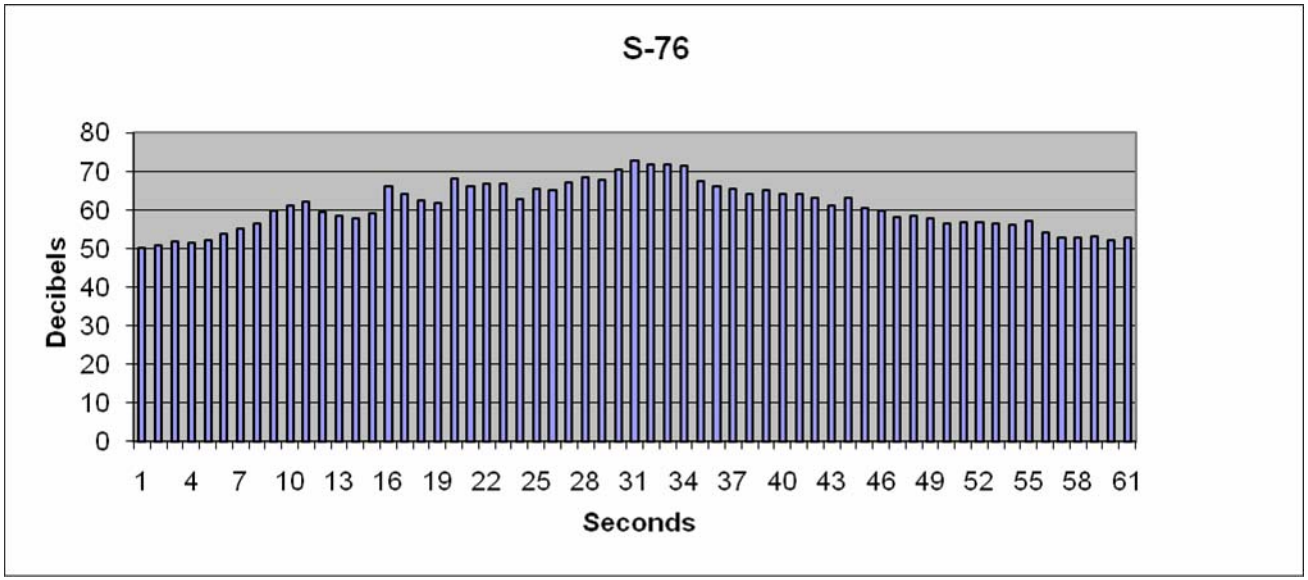


Event	18	
Date	21-Sep	
Time (24 hr)	17:11	
Peak Noise Level	71.4	dB
Altitude	1,920	

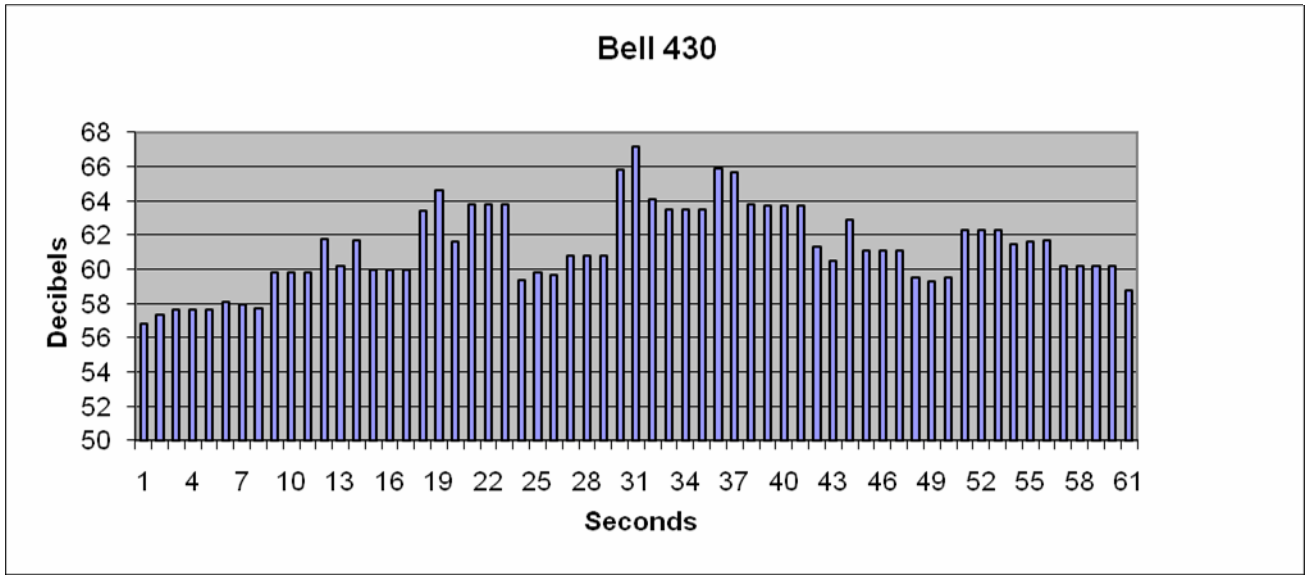


Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	19	
Date	21-Sep	
Time (24 hr)	17:15	
Peak Noise Level	72.6	dB
Altitude	1,845	

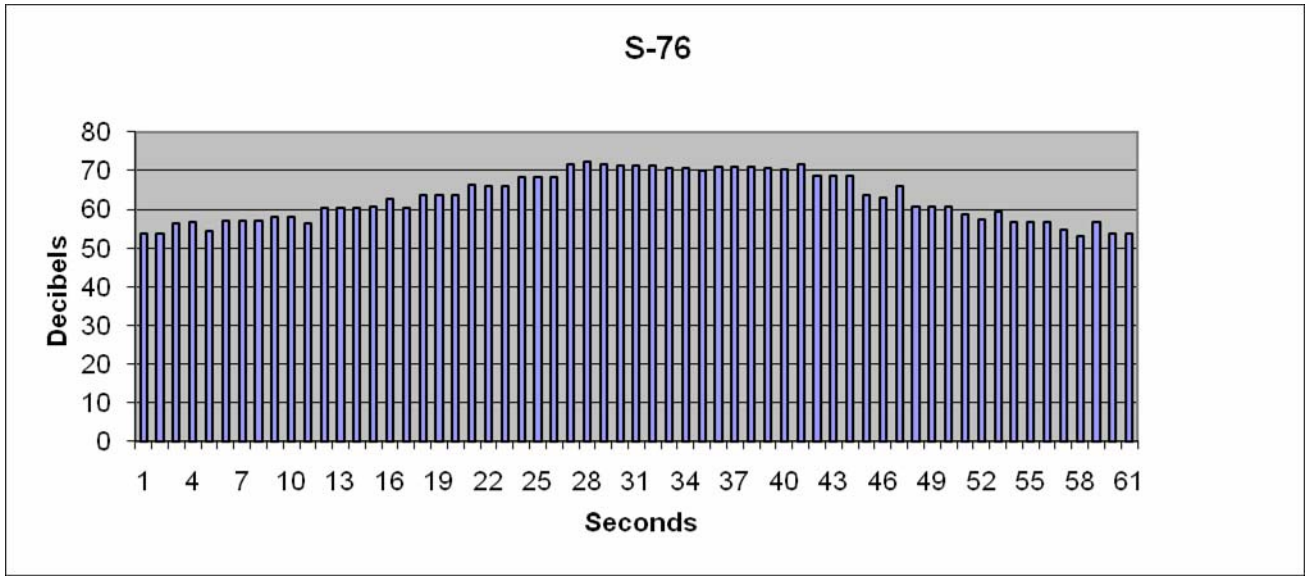


Event	21	
Date	21-Sep	
Time (24 hr)	17:53	
Peak Noise Level	72.3	dB
Altitude	1,970	



Plots of Helicopter Noise Events – Barcelona's Neck, September 17 through 21, 2008

Event	22	
Date	21-Sep	
Time (24 hr)	19:21	
Peak Noise Level	72.3	dB
Altitude	1,970	



Appendix G
Sample Noise Report (July 4, 2008)

Town of East Hampton Airport

200 Daniel's Hole Road
Wainscott, NY 11975
631.537.1130

July Weekly Helicopter Operations

Date 7/2/2008 12pm-1159pm
7/3/2008 24hrs
7/4/2008 24hrs
7/5/2008 24hrs

Track Compliance- **116 OF 138** **Altitude Compliance-** **83 OF 132**
84% 63%

Helicopter Operations for East Hampton Airport

Date	Operation	Tail #	Track	Alt.	Route	Notes
2-Jul	ARR	N646PT	N	N	NA	NONSTANDARD FROM NORTH OVER NORTH HAVEN
	ARR	N7642S	Y	Y	NWC	2500FT AT FERRY
	ARR	N48MT	Y	Y	GEORGICA	1600FT OVER POND
	ARR	N85PS	Y	Y	NWC	2500FT AT FERRY
	ARR	N179MT	Y	Y	NWC	2500FT AT FERRY
	ARR	N696NH	Y	Y	NWC	2500FT AT FERRY
	ARR	N7641S	Y	Y	NWC	2500FT AT FERRY
	ARR	N119EH	Y	N	NWC	1850FT AT FERRY
	ARR	N7642S	Y	Y	GEORGICA	2170FT OVER POND
	ARR	N638MF	Y	Y	NWC	2500FT AT FERRY
	ARR	N661AT	Y	Y	NWC	2745FT AT FERRY
	ARR	N7601S	Y	Y	NWC	2770FT AT FERRY
	ARR	N7641S	Y	Y	NWC	2500FT AT FERRY
	ARR	N179MT	Y	Y	NWC	2945FT AT FERRY
	ARR	N178MT	Y	Y	NWC	2500FT AT FERRY
	ARR	N7643S	Y	Y	GEORGICA	2345FT AT POND
	ARR	N30NY	Y	Y	NWC	2500FT AT FERRY
	ARR	N7601S	Y	Y	NWC	2970FT AT FERRY

Date	Operation	Tail #	Track	Alt.	Route	Notes
2-Jul	ARR	N91AE	Y	N	NWC	1945FT AT FERRY
	DEP	N7642S	Y	Y	JN	2500FT AT JN
	DEP	N119EH	Y	N	JN	2245FT AT JN
	DEP	N48MT	Y	N	JN	1845FT AT JN
	DEP	N85PS	Y	Y	JN	2945FT AT JN
	DEP	N179MT	Y	Y	JN	2500FT AT JN
	DEP	N696BH	Y	N	JN	1345FT AT JN
	DEP	N7641S	Y	Y	JN	3945FT AT JN
	DEP	N7642S	Y	Y	JN	2500FT AT JN
	DEP	N646PT	Y	N	JN	1945FT AT JN
	DEP	N661AT	Y	Y	JN	4345FT AT JN
	DEP	N7641S	Y	Y	JN	4350FT AT JN
	DEP	N179MT	Y	Y	JN	2545FT AT JN
	DEP	N7601S	Y	Y	JN	2500FT AT JN
	DEP	N178MT	Y	N	JN	1845FT AT JN
	DEP	N638MF	Y	Y	JN	2500FT AT JN
	DEP	N7643S	Y	Y	JN	2945FT AT JN
	DEP	N30NY	Y	Y	JN	2500FT AT JN
	DEP	N7601S	Y	Y	JN	3145FT AT JN
	DEP	N91AE	N	N	NA	NONSTANDARD DEP TO NORTH ON NWC ARRIVAL ROUTE AT 6 MILES 1945FT
3-Jul	ARR	N179MT	Y	Y	NWC	2500FT AT FERRY
	ARR	N119EH	N	N	NA	NONSTANDARD OVER SAG HARBOR FROM WEST AT 6 MILES 2200FT
	ARR	N638MF	Y	Y	NWC	2500FT AT FERRY
	ARR	N85PS	Y	Y	NWC	2745FT AT FERRY
	ARR	N30NY	Y	Y	NWC	2545FT AT FERRY
	ARR	N432HF	Y	Y	NWC	2545FT AT FERRY
	ARR	N307PS	Y	Y	NWC	2611FT AT FERRY
	ARR	N646PT	Y	Y	GEORGICA	11950FT OVER POND
	ARR	N99ZA	N	N	NA	NONSTANDARD OVER SAG HARBOR FROM WEST AT 6 MILES 1050FT
	ARR	N408TD	Y	Y	NWC	3245FT AT FERRY
	ARR	N696BH	Y	Y	NWC	2645FT AT FERRY
	ARR	N7667S	N	N	NA	NONSTANDARD FROM EAST AT 6 MILES 1850FT
	ARR	N85PS	Y	Y	NWC	3445FT AT FERRY
	ARR	N30NY	Y	Y	NWC	2500FT AT FERRY

Date	Operation	Tail #	Track	Alt.	Route	Notes
3-Jul	ARR	N886TW	Y	Y	NWC	2845FT AT FERRY
	ARR	N48MT	Y	Y	NWC	3245FT AT FERRY
	ARR	N431HF	Y	Y	NWC	2945FT AT FERRY
	ARR	N7601S	Y	Y	GEORGICA	1500FT AT POND
	ARR	N401LH	Y	N	NWC	1645FT AT FERRY
	ARR	N638MF	Y	Y	NWC	2545FT AT FERRY
	ARR	N461SA	N	N	NA	NONSTANDARAD FROM WEST AT 6 MILES 1445FT
	ARR	N179MT	Y	Y	NWC	2500FT AT FERRY
	ARR	N30NY	Y	Y	NWC	2550FT AT FERRY
	ARR	N407TD	N	N	NA	NONSTANDARD FROM WEST OVER SAG HARBOR AT 6 MILES 1945FT
	ARR	N7643S	Y	Y	NWC	3445FT AT FERRY
	ARR	N7601S	Y	Y	NWC	3120 AT FERRY
	ARR	N431HF	Y	Y	NWC	2550FT AT FERRY
	ARR	N7667S	Y	Y	NWC	2500FT AT FERRY
	ARR	N646PT	NA	Y	NWC	NONSTANDARD OVER NORTH HAVEN AT 6 MILES 2745FT
	ARR	N6MV	Y	Y	NWC	2500FT AT FERRY
	ARR	N130RU	Y	N	NWC	2245FT AT FERRY
	ARR	N401LH	Y	N	NWC	1945FT AT FERRY
	ARR	N430TX	Y	N	GEORGICA	945FT OVER POND
	ARR	N638MF	Y	Y	NWC	2500FT AT FERRY
	ARR	N355MH	Y	Y	NWC	2500FT AT FERRY
	ARR	N430TX	N	N	NA	NONSTANDARD ARR FROM NORTHEAST AT 6 MILES 2045FT
	ARR	N119EH	Y	N	NWC	2270FT AT FERRY
	ARR	N406LH	Y	Y	NWC	2611FT AT FERRY
	DEP	N119EH	N	N	NA	NONSTANDARD TO THE WEST AT 6 MILES 1345FT
	DEP	N179MT	Y	N	JN	1850FT AT JN
	DEP	N638MF	Y	Y	JN	2500FT AT JN
	DEP	N30NY	Y	Y	JN	2500FT AT JN
	DEP	N85PS	Y	Y	JN	2545FT AT JN
	DEP	N432HF	Y	N	JN	1920FT AT JN
	DEP	N307PS	Y	Y	JN	2645FT AT JN
	DEP	N179MT	Y	N	JN	1845FT AT JN
	DEP	N646PT	N	N	JN	TURNED WEST AT LONG POND AT 6 MILES 1845 FT
	DEP	N408TD	Y	N	JN	1945 FT AT JN

Date	Operation	Tail #	Track	Alt.	Route	Notes
3-Jul	DEP	N696BH	Y	N	JN	1845FT AT JN
	DEP	N85PS	Y	Y	JN	3145FT AT JN
	DEP	N30NY	Y	Y	JN	2528FT AT JN
	DEP	N886TW	Y	Y	JN	2500FT AT JN
	DEP	N401LH	N	N	JN	TURNED WEST AT LONG POND AT 6 MILES 1245FT
	DEP	N48MT	Y	N	JN	1645FT AT JN
	DEP	N7667S	Y	Y	JN	2500FT AT JN
	DEP	N7601S	Y	Y	JN	2500FT AT JN
	DEP	N461SA	N	N	JN	TURNED WEST AT LONG POND AT 6 MILES 1145FT
	DEP	N431HF	Y	Y	JN	2645FT AT JN
	DEP	N179MT	Y	N	JN	1800FT AT JN
	DEP	N30NY	Y	Y	JN	2545FT AT JN
	DEP	N119EH	Y	N	JN	1845FT AT JN
	DEP	N7601S	Y	Y	JN	2500FT AT JN
	DEP	N638MF	Y	Y	JN	2500FT AT JN
	DEP	N7643S	Y	Y	JN	2500FT AT JN
	DEP	N7667S	Y	Y	JN	2500FT AT JN
	DEP	N646PT	N	N	JN	TURNED WEST AT LONG POND AT 6 MILES 1845FT
	DEP	N797AZ	N	N	NA	NONSTANDARD TO THE NORTHEAST AT 6 MILES 1145FT
	DEP	N7641S	Y	Y	GEORGICA	1745FT AT POND
	DEP	N130RU	N	N	NA	NONSTANDARD DEP TO SOUTHWEST AT 6 MILES 1061 FT
	DEP	N969YC	Y	N	JN	2145FT AT JN CIRCLED BACK AROUND TO LAND USING NWC ROUTE
	DEP	N969YC	Y	N	JN	1645FT AT JN
	DEP	N355MH	Y	Y	JN	2545FT AT JN
	DEP	N430TX	N	N	NA	NONSTANDARD TO THE NORTHEAST AT 6 MILES 1945FT
	DEP	N6MV	Y	N	JN	1445FT AT JN
	DEP	N406LH	Y	N	JN	1695FT AT JN
	DEP	N430TX	NA	Y	NA	NONSTANDARD TO THE WEST AT 6 MILES 3645FT
4-Jul	ARR	N696BH	Y	Y	NWC	2945FT AT FERRY
	ARR	N99ZA	Y	N	NWC	1945FT AT FERRY

Date	Operation	Tail #	Track	Alt.	Route	Notes
4-Jul	ARR	N7601S	Y	Y	NWC	2545FT AT FERRY
	ARR	NH406LH	Y	Y	NWC	2500FT AT FERRY
	ARR	N179MT	Y	Y	NWC	2500FT AT FERRY
	ARR	N797AZ	Y	N	NWC	1145FT AT FERRY
	ARR	N30NY	N	N	NA	NONSTANDARD TO THE SOUTHWEST AT 6 MILES 1345FT
	DEP	N696BH	Y	Y	JN	2500FT AT JN
	DEP	N119EH	N	N	NA	NONSTANDARD TO THE SOUTHWEST AT 6 MILES 545FT
	DEP	N646PT	Y	Y	JN	2645FT AT JN
	DEP	N178MT	Y	N	JN	1845FT AT JN
	DEP	N7601S	Y	Y	JN	2511FT AT JN
	DEP	N99ZA	N	N	JN	TURNED WEST AT LONG POND 2245 FT AT 6 MILES
	DEP	N406LH	N	N	NA	NONSTANDARD TO THE WEST AT 6 MILES 2045FT
	DEP	N179MT	Y	N	JN	1545FT AT JN
	DEP	N797AZ	Y	N	JN	745FT AT JN
	DEP	N30NY	Y	N	JN	1745FT AT JN
5-Jul	BAD WEATHER					
	ARR	N646PT	Y	NA	GEORGICA	445FT AT POND
	ARR	N7601S	Y	NA	NWC	961FT AT FERRY
	ARR	N85PS	NA	NA	GPS 28	2045FT AT 6 MILES OUT
	ARR	22ZA	Y	NA	GEORGICA	1245FT AT POND
	DEP	N7601S	Y	NA	INSTRUMENT DEP	AT 6 MILES TO THE NORTH 4761FT
	DEP	N85PS	Y	NA	INSTRUMENT DEP	AT 6 MILES TO THE WEST 4170FT
	DEP	N646PT	N	NA	NA	NONSTANDARD OVER SAG HARBOR AT 6 MILES 745FT
	DEP	N99ZA	N	NA	NA	NONSTANDARD TO THE SOUTHWEST AT 6 MILES 545FT
	DEP	N22ZA	N	NA	NA	NONSTANDARD TO THE SOUTHWEST AT 6 MILES 1145FT

Appendix H
East Hampton Master Plan Decision Making Model (07/08/08)

Draft East Hampton Master Plan Decision Making Model 7/8/08
Pp. Refers to pages of 4/24/07 Draft Airport Master Plan Report;
SPH refers to Summary of Public Hearing document

I. Design Aircraft (Pp. III 99 - 103) – Design aircraft is used as a planning tool to determine the necessary development of the airport needed to meet the aeronautical demands while minimizing local impacts.
Bd. consensus: Cessna Citation V for Runway 10-28; Beech Baron for 4-22: These aircraft meet the FAA definition for design aircraft i.e. the most demanding aircraft that has 500 or more itinerant operations annually. VLJ (Very Light Jets), while expected to access EH airport more in the future are too new to the industry to designate as the Design Aircraft for 10-28 at this time, but will likely be accommodated by the Cessna Citation V Design Aircraft criteria.

II. Facilities

1. **Runways (and Daniel's Hole Rd.):**

A. Runway 10-28: (Pp. III 140 - 155; III 176 - 180))

Bd. Consensus: Neither reducing nor extending the length of Runway 10-28 are consistent with the goals for the Town Airport. However, in order to maintain the existing runway length either Daniel's Hole Rd. must be relocated or Runway 28 must be displaced by 150 feet. According to Noise Consultant Henry Young, displacing the threshold of runway 10-28 is not likely to discourage large or noisy aircraft from landing at EH Airport. Retaining the current length maximizes safety. Displacing the threshold will require replacing all the runway lights to maintain proper spacing, the runway end identifier lights (REILS), the Precision Path Indicator Path Lights (PAPIs) and restriping the runway. According to the estimates comparing the projected costs for relocating Daniel's Hole Road verses displacing the threshold prepared by the Town Highway Department and Savik and Murray respectively, the displaced threshold would cost over $350,000 compared to $131,500 for the relocation of Daniel's Hole Rd. (Note: Greenman-Pedersen, Inc. on behalf of The Save East Hampton Airport, Inc. submitted an $815,000 estimate to displace the threshold). Considering all of these factors together, the Board recommends retaining the length of Runway 10-28 and relocating Daniel's Hole Rd. to meet the FAR Part 77 approach restrictions.

B. Comparing Runways 16-34 with 4-22

Discussion: Two runways provide 95% wind coverage at the East Hampton Airport, thus the Airport Improvement Program does not financially support a third runway. Runway 10-28 should continue to exist as the main runway. To help evaluate whether Runway 16-34 or 4-22 should be maintained as the secondary runway for the East Hampton Airport, the Board evaluated comparative noise impacts, airport configuration, wind coverage and safety. A comparison of the noise contours for the two runways, on the basis of single events indicates that at the 65 dBA, the lowest level of exposure, runways 16-34 and 4-22 affect 1,727 and 1,794 people respectively. At the 80 dBA or the highest level of exposure, runways 4-22 shows 172 people affected compared to 26 for runways 16-34. Runway 4-22 offers the most wind coverage during the summer

months, the dominant usage time for the airport and corresponds to the predominant runway layout direction of LI airports. Runway 16-34 provides comparatively better wind overage during the winter months than runway 4-22. The separation distance between Runway 16-34 and the terminal parking area and taxilane is non-standard and therefore, a portion of the existing aircraft parking would be lost if Runway 16-34 is selected as the secondary runway. From an overall airport layout and optimal function perspective, maintaining Runway 4-22 is more efficient than 16-34. Eliminating 16-34 also retains the use of Industrial Park Lot 39 and eliminates height restrictions for buildings on the north side of Industrial Rd.

B. Bd. Consensus Runway 4-22(Pp. III 156 – 162; 176-180)- 4/23/08

Rehabilitate Runway 4-22, remove trees in the approach to runway 22 and rehabilitate to a length of 2,375 ft. or 126 ft. shorter on runway 22 end and to a width of 60 ft.; include a 60 ft. displacement on 22 end for vehicles on Daniel's Hole Rd. (Pp**. III-161 Figure III-47 and V-251 Alternative 2 also Alternative 2A)** and evaluate in DEIS other procedures and layout alterations to reduce noise impacts to residences to the southwest including extending Runway 4-22 approximately 500 feet to the north to allow departing planes to gain more altitude, maneuverability and banking to avoid flying over residences and displaced thresholds to avoid the power lines, other obstructions and the southwestern portion of the runway.

C. Runway 16-34 (Pp. III 163 – 170; 176- 180) 4/23/08

Bd. Consensus: Close runway, remove pavement and restore area to a natural condition. This will retain use of Industrial Park Lot 39, eliminates height restrictions for lots on the north side of Industrial Road and retains use of tiedown space apron without violating runway separation distances.)

2. Taxiways (Pp. III 172 – 176)

Bd. Consensus:

- **a.** Construct a new approximately 300 ft. long taxiway connecting existing Taxiways D and A in order to provide a full length parallel taxiway to Runway 10-28 **(Pp. V-250 Alternative 2**, **2A)**
- **b.** Extend taxiway G to connect to runway 28 and extend taxiway E south of runway 10-28 to connect with extended taxiway G (**Alternative 2A**)**.**

2. Aircraft Aprons (Pp. III 181 – 183)

Bd. Consensus: Develop policy language for the Master Plan setting forth and reflecting the goals of the Town Bd. with regard to the airport- i.e. safety first, noise control and no expansion. Set forth policy reflecting consensus of no new apron tie down space or hangars which could lead to growth of airport but evaluate proposals if they have the potential to increase safety and reduce noise.

3. Aircraft Hangars (Pp. III 186 – 189)

Bd. Consensus- refer to aprons

6. Attendants Office (Pp. III 184)

Bd. Consensus:

a. Renovate the main building to accommodate a 2nd floor office

7. Airport Maintenance Facility (Pp. III 184)

Bd. Consensus: Provide a maintenance building to shelter airport equipment and materials, near existing fuel farm- consider a pre-fab building.

8. Fuel Farm (Pp. III 185 – 186)

To reduce the Town's liability and improve efficiency at the airport, the Town will consider leasing the fuel farm to two FBO's, with pass through flow fees As part of this proposal, the Town will allow the installation of one additional 12,000 gallon Jet A fuel storage tank enabling each of the two FBO's to lease a Jet A fuel storage tank.

Note: Existing Jet a fuel tank and pump are in good condition; security cameras, fencing, lighting and state of the art spill prevention and containment technology are in place)

9. AWOS (Automated Weather Station) (Pp. III-105 -107)

Bd. Consensus: An AWOS has been designed and will be installed as soon as possible. This is expected to help improve safety immediately and will change the airspace classification from uncontrolled G to controlled class E.

10. Airport Traffic Control Tower (ATCT) (Pp. III 109 – 112)

Bd. consensus: Contract with a private company to provide a seasonal ATCT using mobile and/or existing airport facilities. This will allow further control of the airspace to a D classification and will bring all aircraft within 5 miles of the airport, including beach banner towing, under the jurisdiction of the ATCT.

11. Navigational Enhancements – No physical navigation systems are necessary or proposed at the East Hampton Airport. Existing navigational aids will be supplemented with GPS approaches. (Pp. III 123 –128)

12. **Auto Parking, Circulation and Access Improvements (Pp. III 189 – 190; supplemental description and drawing)**

Board Consensus: Pave 30 new parking stalls for rental car parking, 12 new parking stalls for airport employees; restrict free parking to **X** hour limit and parking for a fee up to **X** days.

III. Industrial Park

Board consensus: Dedicate a portion of the vacant lots north of Industrial Road for future aviation use and allow all the remaining vacant lots to be developed for any commercial industrial uses permitted or specially permitted by the Zoning Code and WRO regulations. (Note: vacant lot 31 is required for Runway Protection Zones for Runway 4; Lots 27 and 34 are too restricted for commercial industrial development).

IV. Operations, Management and Regulations

A. Fixed Wing Airport Traffic Pattern

Board Consensus: Utilize the authorities obtained by operating an ATCT to the fullest extent to reduce and redistribute noise disturbance.

B. Helicopter routes and regulations

Board Consensus:

a. Continue to track and monitor compliance with existing voluntary helicopter routes and at altitude of 2,500 ft. or above (inbound over Northwest Creek; outbound between Jessup's Neck and Noyac; and inbound and outbound over Georgica).
b. Require mandatory compliance helicopter routes in connection with installing and operating an ATCT and vary routes in order to reduce noise.
c. Continue to lobby for Congressional action to address the unique situation at East Hampton Airport.
d. Continue to pursue actions which are prudent, reduce noise impacts and address noise complaints

C. Noise

Review of existing noise abatement program:

a. **Voluntary noise abatement measures**:
    i. Established 2 recommended flight paths routes for helicopters after evaluating noise contours and impact analysis prepared by HMMH: inbound over NW Creek and outbound between Jessup's Neck and Noyac; inbound and outbound over Georgica Pond.
    ii. Raised helicopter flight paths to a minimum 2,500 ft. (note: this is higher than the HMMH 2003 recommendation of at least 1,500 ft AGL and 1,800 to 2,000 ft. as desirable).
    iii. Instituted a voluntary 11Pm to 7 Am. aircraft curfew.
    iv. Recommend limiting touch and go landings to a maximum of 3 per flight.

b. **Monitoring by Airport Manager and Assistant**
    i. Continuous monitoring and evaluation of airport traffic.
    ii. Instituted state-of –the-art Flight Tracking System using AirScene.
    iii. Compile AirScene Flight Tracking Data (weekly during peak season, monthly during off-season).
    iv. Utilize Flight Tracking System data to notify pilots and Eastern Helicopter Council about aircraft violating voluntary noise abatement measures.
    v. Maintain and monitor 24 hour noise hotline; match complaints to AirScene data when possible.
    vi. Deploy portable noise monitors to provide an objective measure of noise complaints.

c. Communication and Coordination

i. Improved communication and coordination between Airport Manager and Airport Noise Abatement Committee

ii. Improved lines of communication between the Airport Manager and Eastern Region Helicopter Council, other Helicopter Companies and the aviation community at large on all matters including voluntary noise abatement measures

iii. Coordinate and lobby federal legislators to address the unique situation at East Hampton Airport

iv. Publication of a noise abatement advisory insert page for fixed wing pilots detailing the National Business Aircraft Association (NBAA) recommended noise abatement departure procedures and other voluntary restrictions.

d. Facilities, operations or management regulations adopted or proposed which help abate airport noise

i. Increased and adjusted landing fees which have:
   1. reduced touch and go landings
   2. discourage violating voluntary nighttime curfews

ii. Agreed to install an Automated Weather Observation System (AWOS) which is projected to reduce noise during low visibility conditions and allows airspace to change classification from uncontrolled G to controlled, class E.

iii. Agreed to consider installing a seasonal Air Traffic Control Tower which would allow further control over the airspace to a Class D??

2**. Memorialize existing program; continue to evaluate existing program and characterize the nature and extent of the existing noise problem.** i.e. time of day, frequency, noise levels etc.

3. Use the more detailed information about the noise problem to help focus and enhance the existing noise abatement program. Recognize that noise abatement planning is sequential beginning with the least restrictive solutions and eventually considering more aggressive strategies only when lesser measures have failed.

D. **Environmental Management**

a. Retain the 107 acres north and east of Daniel's Hole Rd. for parks and conservation use with the explicit provision that clearing and other safety measures required for the airport, including the relocation of Daniel's Hole Rd. can occur in this area; rezone to Parks and Conservation zoning; contain the airport and CI uses to the main airport property and the Industrial Park.

b. Management of Grasslands (as per 10/16/07 memo from Planning Director) – coordinate with NYSDOT on mowing.

c. Groundwater Protection

V. Airport Financing and Control

Board consensus: Use financial model to evaluate alternative scenarios

VI**. Role statement**-

a. Role statement as provided on PP II-73 and 74

b. Changes to the role statement as indicated :

"The East Hampton Airport is owned, maintained and operated for the benefit of the Town and its residents. The airport continues to be classified as a General Aviation Airport under federal criteria. Its primary role is the accommodation of light aircraft traffic. Aircraft operating at greater weights may be accommodated on condition without unjust discrimination. …"

"The Town is committed to observing the highest standards of safety, and efficiency and observes all appropriate federal and state standards in terms of layout, operation and maintenance. The facility shall not be allowed to deteriorate, but instead shall be maintained and may be improved in an exemplary manner.

"Control of noise and adverse environmental impacts at the airport is consistent with current Town goals for improved quality of life and land and water conservation. These goals recognize that protecting the environment is essential for improving the Town's seasonal and year round economy. These controls are achieved through reasonable, non arbitrary and non discriminatory management practices. These may limit hours of operation, the maximum size or noise footprint of aircraft to be accommodated, regulate excessive peak demand during the summer season and otherwise adjust patterns to minimize community disturbances."

Appendix J
East Hampton Town Comments to FAA Regarding Helicopter Route

Comments of the
Town of East Hampton
Docket FAA-2010-0302
New York North Shore Helicopter Route

Introduction and Summary

The Town of East Hampton (Town) submits these comments in response to the Notice of Proposed Rulemaking (NPRM) to require helicopter operators to use a route named the "New York North Shore Route" (NYNSR) when operating in the vicinity of Long Island, New York.

The Town of East Hampton believes that the NYNSR is a first step in addressing, in a comprehensive and thoughtful manner, the problem of helicopter overflights and noise throughout the east end of Long Island. The preface to the NPRM asserts that the "intended effect" of the NPRM is to "reduce the noise impact on nearby communities" of helicopter traffic traveling from New York City and nearby areas to the communities in the east end of Long Island. The Town applauds the FAA (and our Congressional delegation) for recognizing that the noise impact of helicopter operations is a critical issue that warrants the unusual step of promulgation of a formal Part 93 rule setting forth mandatory flight patterns. The Town looks forward to working closely with the FAA and other stakeholders to complete the job that the NPRM starts.

In order to complete the effort, the Town urges the FAA to convene a formal stakeholder process. This proposed process would be more inclusive than that proposed by the pending FAA Reauthorization legislation and would ensure that the Town, other airport proprietors and affected communities have a seat at the table in directing a comprehensive study of helicopter noise in the east end of Long Island. The study should examine alternative flight corridors and altitudes and should optimize those corridors and altitudes to achieve the FAA's laudable objective of reducing adverse impacts from helicopter overflights. The Town expects that such study would not be limited to routes off the north shore of Long Island. Instead, the study should include mandatory corridors for helicopter operations off the south shore and on-shore for helicopters transitioning between those off-shore corridors and their ultimate origin/destination in eastern Long Island. The Town requests that the FAA make a commitment, in connection with issuance of the NYNSR, that it will formally initiate a stakeholder process to evaluate and propose new Part 93 rules to implement the recommendations of such a study.

Background

The issue of helicopter noise has been a contentious issue in Long Island for years. The Town, which is the proprietor of East Hampton Airport (HTO), has been taking the lead in working aggressively with many stakeholders to address the helicopter problem. The Town has taken leadership on this issue for three reasons:

First, HTO is the largest airport in eastern Long Island. It receives the largest proportion of helicopter traffic in the region and is located in close proximity to residential communities whose quiet environment is a key attribute. Residents and visitors to HTO are the predominant clientele for helicopter traffic in eastern Long Island. Finally, because of the Town's geographic location, the Town experiences almost all of the impacts of helicopter traffic.

The FAA, through the unusual action of issuing an NPRM to establish mandatory helicopter routes from the New York metropolitan area to eastern Long Island, has clearly recognized the unique nature of (and almost ubiquitous) problem of helicopter overflights in the east end of Long Island. Not only does eastern Long Island receive an extraordinary amount of helicopter traffic (compared to other regions of the country) but the geography and residential patterns make solutions far more practical than in areas where helicopter traffic is primarily operations for medical, traffic, or public safety functions.

For approximately six years, the Town has been working with stakeholders – including especially the FAA and the Eastern Region Helicopter Council – to develop voluntary procedures to mitigate the adverse effects of overflights within the Town and vicinity. Since 2004, the Town has published a pilot guide that describes and depicts preferred helicopter arrival and departure routes for helicopters using HTO. The Town has worked closely with the Congressional delegation and was instrumental in helping the Senator reach the *Continued Cooperation and Compliance Agreement* with the Eastern Region Helicopter Council in December 2007.

We understand that the NPRM is designed to address two significant defects with the present flight patterns. First, the current procedures, as recognized in the Eastern Region Helicopter Council letter agreement, are voluntary. Despite the Town's efforts, Senator Schumer, former Senator Clinton and Representative Bishop and the FAA, (at least implicitly, through issuance of the NPRM) have all recognized that the voluntary procedures have not worked. Various figures have been offered as to the compliance rate, but everyone involved in the issue would agree that the compliance rate has not been satisfactory.

Second, these current voluntary procedures address only a small segment of the problem of helicopter overflights and noise. The Town has long urged adoption of a preferential route off-shore along the south shore of Long Island. A mandatory south shore route would reduce overflights of incompatible land to a far greater degree than any existing voluntary (and proposed mandatory) NYNSR. To be clear, the Town of East Hampton requests that in addition to the proposed mandatory northern route, the FAA also implement a mandatory southern route for those helicopters arriving and departing via East Hampton's southerly noise abatement route. Neither the existing – nor the proposed – procedures address routes and altitudes once helicopters exit the NYNSR. Because of geography, traffic transitioning between the NYNSR and either Francis S. Gabreski

Airport (FOK) or HTO must overfly significant residential areas within the Town. In contrast, helicopter traffic using a south shore route would only minimally overfly residential areas, especially if traffic to and from HTO used the Town's preferred Georgica Pond route from the south.

Finally, a consequence of the NPRM would be the preemption of language in the pending FAA Reauthorization Act that would mandate a study of helicopter routes and noise mitigation in eastern Long Island. Largely in response to concerns in eastern Long Island that the present voluntary measures are unsatisfactory, and that a north shore-only route does not effectively minimize helicopter overflight noise, Congressman Tim Bishop inserted language into the pending House version of the FAA Reauthorization Act that would mandate a study of helicopter routes and altitudes and recommend measures to abate the effects of helicopter operations on residential areas of Long Island. *See* H.R. 1586 (111th Cong, 2nd Sess.) § 818. The Town believes that a thorough study supervised jointly by the FAA, the Town, other airport proprietors, the operators' trade association, and other stakeholders, is a necessary predicate to a thoughtful and thorough resolution to the problem of helicopter noise in eastern Long Island. The Town urges the FAA to make clear that its NPRM is not intended to, and in fact will not, obviate the need for such a study. The final rule should explicitly include an FAA commitment to fund, and to convene the relevant stakeholders to oversee such a study. Most important, each of the stakeholders should have a seat at the table to ensure the study's legitimacy and to ensure that it genuinely and transparently addresses the problem of helicopter overflight noise in eastern Long Island in a comprehensive manner[1]

Specific Comments on NPRM

1. FAA must conduct required the environmental review of the proposal.

The NPRM erroneously states that the proposed NYNSR is categorically exempt from preparation of environmental documentation under the National Environmental Policy Act and FAA regulations implementing that statute, FAA Order 1050.1E (2004). While the NPRM correctly quotes to the regulations of the Council on Environmental Quality and paragraph 312f of Order 1050.1E, neither that provision of the FAA Order nor the bases upon which the NPRM was issued support the agency's conclusion that a categorical exclusion is appropriate in this instance.

First, and most important, the NPRM frankly discloses that the entire purpose of the proposed action is to "reduce noise impact on nearby communities." While the Town has

[1] The study committee, in which all relevant stakeholders have a meaningful role and a seat at the table in directing the study, has precedent in FAA-funded Part 150 Noise Compatibility Programs. Under Part 150, the FAA directs that airport proprietors convene stakeholder groups to help direct and scrutinize study work product. Since most noise-related flight patterns in the country are the result of Part 150-initiated efforts, these types of stakeholder-driven studies are standard practice. We urge the FAA to adapt the principles underlying the Part 150 process to this effort.

no squabble with that purpose, the agency provides no factual, technical or analytic basis for concluding that the proposed NYNSR actually fulfills that purpose. Without even the most rudimentary noise analysis, it would be arbitrary and capricious for the agency to conclude that the NYNSR in fact achieves the purpose of the proposal to reduce noise impact on nearby communities. In fact, the study that the Town is requesting would be designed for precisely that purpose: to ensure that *all* helicopter routes serving the east end of Long Island optimize the FAA's and the communities' noise abatement objectives. Without data demonstrating that the FAA has struck the appropriate balance, the public does not have the confidence knowing that the NYNSR (or alternatives or additional routes) will reduce helicopter noise.

The statement in the NPRM that the proposal is categorically excluded from NEPA review because it does not significantly affect the human environment contradicts the agency intent in proposing the NYNSR. If the action does not significantly affect the human environment, then there would be no basis upon which the agency could conclude that it will "reduce noise impact on nearby communities" as asserted in the NPRM.

Second, the agency mischaracterizes the legal standard for categorical exclusions under both NEPA and Order 1050.1E. The FAA Order, Council on Environmental Quality regulations and all relevant case law provide for categorical exclusions for actions that will not have a "significant effect on the human environment." *See* 40 C.F.R. § 1508.4; Order 1050.1E ¶ 303a. The FAA's list of categorical exclusions similarly uses the term "significantly affecting the human environment." Order 1050.1E ¶ 303a. The NPRM, however, misquotes this authority when concluding that the NYNSR is categorically excluded from NEPA review because "implementation of the proposed rule is not expected to result in significant *adverse* impacts to the human environment." (emphasis added). There is no precedent for the agency declining to conduct environmental review on the basis of the absence of significant *adverse* impacts. In fact, it appears that the very purpose of the NPRM is to produce significant *beneficial* impacts on the human environment; if that is true, environmental documentation is required to document those benefits.

Finally, the agency has cited the wrong provision of Order 1050.1E to justify its claim of categorical exclusion from environmental review. While paragraph 312f of Order 1050.1E does refer to "regulations," paragraph 311 of that Order is the appropriate section for procedural actions such as the NYNSR. For example, paragraph 311h categorically excludes "establishment of helicopter routes that channel helicopter activity over major thoroughfares." Order 1050.1E ¶ 311h. Most importantly, paragraph 311i provides a categorical exclusion for establishment of new or revised air traffic control procedures "conducted at 3,000 feet or more above ground level." That paragraph explains that the categorical exclusion *only* applies when such procedures affect air traffic above 3,000 feet above ground level (AGL). There is no exclusion in paragraph 311 that could even arguably apply to the NPRM and since that paragraph is the one that addresses environmental review of flight pattern actions, the agency cannot reasonably

assert that the NPRM is categorically excluded from environmental review. There is nothing in FAA Orders or FAA precedent that contemplates a categorical exclusion for air traffic actions that (a) establish or revise air traffic procedures for aircraft operations *below* 3,000 feet AGL; or (b) establish or revise air helicopter routes where such routes *do not* follow major thoroughfares.[2]

An unnumbered appendix to Order 1050.1E, entitled "*Order 1050.1E 3,000 ft AGL Categorical Exclusion Validation Study"* provides the technical basis for the agency's decision to exclude from environmental review those air traffic procedures affecting only aircraft at that level and higher.

While there does exist a categorical exclusion for publication of *existing* air traffic control procedures that "do not essentially change existing tracks, create new tracks, change altitude, or change concentration" of aircraft activity, Order 1050.1E ¶ 311k, that provision does not apply here since the existing, *voluntary* helicopter route was never issued as a formal regulation and was never formally established as is proposed in the NPRM. *See* FAA Order 7210.3V § 11-6-1 (2008) (emphasizing that the Helicopter Route Chart program is voluntary).

Even if the FAA could shoehorn the NPRM into an existing categorical exclusion in Chapter 3 of Order 1050.1E, that chapter also defines so-called extraordinary circumstances in which normally categorically excluded actions require additional environmental analysis. Even if the agency disagrees with the Town's legal analysis of the FAA's obligation to conduct environmental review, the Town urges the FAA to exercise its discretion under Order 1050.1E to conduct meaningful environmental review. One of the bases upon which normally categorically excluded actions must be subjected to environmental review is if the action will have an impact on "noise levels on noise-sensitive uses." *Id*. ¶ 304f. It is noteworthy that the Order does not refer to an *increase* in noise levels but merely an "impact," suggesting that either a positive or adverse impact on noise levels in noise sensitive areas is an extraordinary circumstance. Given that the agency has asserted that the "effect" of the NPRM is to "reduce noise" over residential areas of Long Island, there can be no doubt that the NPRM satisfies the provisions of paragraph 304f.

2. FAA should consider a South Shore route as an alternative or complement to the New York North Shore Route.

The implication of the NPRM is that the NYNSR will resolve issues and concerns about noise impacts from helicopter operations over Long Island. It is important that the FAA

[2] As further indication of the inappropriateness of categorically excluding the NPRM from environmental review, Order 1050.1E does provide an exclusion for tests of air traffic procedures conducted *under* 3,000 feet AGL but only if the test duration does not exceed six months. *Id*. ¶ 311n. The NPRM does not propose a test of the NYNSR.

be clear that both the purpose and effect of the proposed NYNSR would be far more modest.

Because the agency has done no environmental review, and apparently has conducted no noise analysis of either the existing conditions or the effect of the propose NYNSR, there is no information available about whether the proposal will achieve the FAA's objective of addressing helicopter noise concerns in residential areas of Long Island. In particular, there is no comparative analysis of the proposed NYNSR with other possible helicopter routes or permutations of the proposal.

We request that, before issuing a final rule, the FAA convene a stakeholders group to oversee a thorough noise analysis (in a manner consistent with established FAA precedent, using the latest FAA-approved version of the Helicopter Noise Model) of the NYNSR along with the following permutations and alternatives:

1. *Atlantic Route*. The analysis should compare the relative benefits of the NYNSR with a route that would direct helicopter traffic offshore the south shore of Long Island (the "Atlantic Route"). The Atlantic Route could produce meaningful benefits especially for over-land helicopter traffic since many of the eastern Long Island origins/destinations for helicopter traffic (including FOK, HTO, and MTP) are located closer to an off-shore Atlantic Route than to the proposed NYNSR. An Atlantic Route would minimize over-land routes and could, therefore, produce greater benefits than the NYNSR. The analysis must consider not only the noise impacts but, even more important, the mandatory allocation of traffic between a NYNSR and Atlantic Route in light of congestion constraints imposed by JFK terminal airspace. (The fact that some changes might be necessary for traffic within JFK terminal airspace is not a valid basis upon which to reject an Atlantic Route; the complexity and consequences of any necessary changes should be analyzed and disclosed prior to issuance of a final rule.)

2. *Combined Routes*. FAA must also conduct analysis that examines a balance of traffic between the NYNSR and the Atlantic Route. The analysis must include an examination of whether routing aircraft based upon their eastern Long Island origin/destination and their New York metropolitan area origin/destination would result in a better balance of noise impacts. The analysis should propose the optimal balance among alternative routes to achieve the FAA's objective of reducing noise impacts on noise sensitive uses from helicopter operations.

3. *Over-Land Routes*. While the proposed NYNSR has the laudable objective of reducing helicopter noise impacts, the agency has failed to consider the impacts by helicopters departing or entering the NYNSR.

These operations would all be conducted over-land. The agency should prescribe mandatory routes for transition between the NYNSR (and Atlantic Route) and principal origin/destination airports in eastern Long Island, including especially FOK, HTO, and MTP. The transition routes should be designed to optimize overflight of compatible land uses.

4. *Defined Entry and Exit Points.* The noise analysis must examine whether defining specific permissible entry and exit waypoints from the NYNSR would enhance the noise reduction objectives of the NPRM. The NPRM does not state whether pilots will be permitted to exit the NYNSR at any point of the operator's choice or whether only defined entry and exit points (based upon defined over-land routes) will be permitted. The noise analysis should examine the comparative noise impacts of using defined entry/exit points versus allowing operator flexibility.

3. FAA should consider alternative minimum altitudes as a means of reducing helicopter noise.

Had the FAA conducted noise analysis of the proposal, as required by NEPA and FAA Order 1050.1E, it would have learned that the altitude of helicopter traffic is a significant determinant of noise levels. The agency's proposed NYNSR retains the existing voluntary route altitude of 2500 feet AGL. The proposal does not address minimum altitudes for helicopters transitioning from the NYNSR to their origin/destination within eastern Long Island. Since most of the impact of helicopter operations come from over-land routes, it is important for the agency to analyze options for alternative altitudes. In particular, the Town recommends that the minimum attitude for helicopters using the NYNSR be 3000 feet AGL and that a comparable over-land minimum altitude be established until a helicopter reaches the immediate proximity of its destination.

Without considering flight altitude and profiles, and without data on the effect of altitude on noise, the FAA proposal is incomplete and it is unclear whether the proposal achieves the objectives of the NPRM. The Town requests that no rule be promulgated until the noise impact of alternative altitudes (both within the NYNSR, along a proposed Atlantic Route, and along transition routes) has been analyzed and compared.

4. FAA should mandate waypoints and/or routes for helicopters enroute and over land at the eastern end of Long Island.

The proposed NYNSR would establish a helicopter route with no waypoints and only designations at the eastern (Orient Point) and western (WPLYD) terminus of the route. In order to be effective at keeping helicopter traffic over non-noise sensitive areas and over water, the NPRM should establish waypoints along the entirety of the route.

Additionally, as discussed in other contexts above, in order to be effective, the NYNSR must include transition routes from the principal airport destinations in eastern Long Island. These routes should be defined by precise waypoints as well. Similar waypoints should be established for a south shore (Atlantic) route.

Without waypoints along either the offshore portion of the NYNSR or along transition routes over-land, the FAA will have little way to either measure or enforce compliance with the NYNSR. Even if helicopter operators are vigilant in attempting to comply with the mandatory route, they will be stymied in their efforts if the rule does not include meaningful waypoints.

Comments proposed by local noise advisory group

The Town has requested that its Airport Noise Abatement Advisory Committee (ANAAC) provide the Town with its feedback and advice. In addition to the comments above, the ANAAC offers the following additional comments on the NPRM.

1. That helicopters arriving/departing East Hampton Airport (HTO) or points east of HTO via the North Shore route be required to use Plum Island as a waypoint, to proceed over water to the maximum extent possible to HTO and to comply with local (HTO) rules concerning flight paths and minimum altitudes when operating within 5 miles of HTO.
2. That the FAA establish similar mandatory flight rules for the south shore route and establish procedures to equalize the volume of helicopter traffic using the north and south shore routes. Local management (HTO) of helicopter traffic should be enhanced.
3. That the minimum altitude be increased to 2500 feet to 3000 feet.

The Airport Noise Abatement Advisory Committee also strongly recommends that the FAA to work establish procedures, in cooperation with local airports, to monitor and enforce compliance with the proposed rule(s) once finalized.

Conclusions

The Town of East Hampton congratulates the FAA on its efforts to address noise impacts from helicopter operations over eastern Long Island. The Town also applauds Senator Schumer, Congressman Bishop and former Senator Clinton for their perseverance in working with the FAA to focus on this long-festering issue. The Town further appreciates that the NPRM represents the first step, not the end of a public dialogue on how best to reduce the impacts of helicopter overflights and noise in the east end of Long Island. In particular, the Town recognizes that it is highly unusual for the FAA to be willing to promulgate a Part 93 rule to address helicopter flight patterns and appreciates

the agency's demonstrated willingness to impose mandatory routes for helicopter traffic in the region.

Notwithstanding the Town's recognition of the importance of this first step, the Town believes that the NPRM can be significantly improved in several material respects.

Since the agency has failed to conduct either noise analysis or an alternatives analysis (both of which are required under applicable FAA regulations), neither the Town nor the public can determine whether the NYNSR will achieve the agency's laudable objectives. The Town requests that the agency prepare a meaningful environmental impact analysis before reissuing the NPRM.

Finally, the Town requests that the FAA convene and fund a stakeholder group to oversee a study designed to optimize the noise reduction objectives that are set forth in the preamble to the NPRM. That study should be consistent with the scope set forth in Section 818 of the pending FAA Reauthorization legislation. In order to ensure the credibility of such a study, the study must include the formal participation of a stakeholder group, consisting of the municipalities and airport proprietors in eastern Long Island and operator groups who are most potentially affected by proposed helicopter routes.

For further information about this submission, please contact Jim Brundige, Airport Manager, East Hampton Airport.

Respectfully Submitted,

June 25, 2010

Town Supervisor
Town of East Hampton